THE CYCLOPAEDIA;

or,

Universal Dictionary

of

ARTS, SCIENCES, AND LITERATURE.

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THE

CYCLOPAEDIA;

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CORNEA.-Tunica, in Anatomy and Optics, is a dense, strong, and transparent membrane, occupying the vacancy which is left by the sclerotic in the front of the eye-ball. See Eye.

It is situated in the sclerotic. Dr. Porterfield considers both theo as one and the same tunicle, expanded from the external coat of the optic nerve about the whole globe. It has a greater convexity than the rest of the globe of the eye, forming, according to M. Petit, a portion of a sphere, whose diameter is usually 7, 7 1/2, or 7 1/2 lines; its chord, or, which is the same thing, the diameter of the iris, including the thickness of the cornea, commonly measures 5, 5 1/2, or 5 1/4 lines. The distance between the centre of the cornea and the crystalline lens, measured on the axis of the eye, from the outside of the cornea, is 3 1/2, from which deducting 7, which is the thickness of the cornea itself, there remains 1 1/2 for the thickness of both chambers of the aqueous humour. Others have given to the cornea the figure of the vertical part of a parabolic or hyperbolic sphere. Although the cornea is more protuberant than the other parts of the eye and elevated above the spherical surface of its opaque portion called sclerotic, this protuberancy is different in different animals. In birds it is much more elevated and convex than in either man or quadrupeds. This convexity of the cornea serves like that of a convex lens, as it is part of a lesser or greater sphere, to make objects appear greater or less, more remote or nearer. But as it is the use of the cornea, and of the aqueous humour which lies behind it, to commence the refraction of the rays of light, which is afterwards completed by the crystalline and vitreous humours, it may be asked how it comes to pass, that the great convexity of the cornea in birds does not render their sight confused and indistinct, by increasing the refraction, and making the rays meet at some point before the retina, just as in the case of myopes or short-sighted persons, who never see objects distinctly at an ordinary distance, because the cornea, by its too great convexity, makes the rays converge too soon behind the crystalline? To this inquiry it is replied, that this great convexity of the cornea of birds is absolutely necessary for distinct vision; because, as in men and quadrupeds the figure of the eye is almost spherical, so in birds, as well as in fishes, it is flat and depressed, both in its fore and back parts, by which means the retina is placed near the crystalline humour; and, therefore, if the convexity of the cornea did not correspond to the flatness of their eyes and the distance of the retina, the distinct image of visible objects would fall behind it, and the sight would thus be rendered confused and imperfect, like that of the prebyte or old men, who cannot see objects distinctly, especially at a small distance, on account of the flatness of their eyes in proportion to the distance of the retina; and therefore nature has wisely provided, with a view to the perfection of the organs of animals, that the convexity of the cornea should be increased in those creatures which have the retina brought near to the crystalline by the flatness of their eyes; for, being thus enabled to see objects distinctly at an ordinary distance, they can, by changing the conformation of their eyes, adapt them to all other distances, as necessity requires. In men and quadrupeds, both the sclerotic and cornea, though of a dense compact substance, are nevertheless soft, flexible, and yielding, like other membranes. But in birds and fishes the sclerotic is altogether inflexible, being generally harder than a cartilage, and in some quite bony; whence it seems manifest, that in those creatures the change of the conformation of the eye, by which it is adapted to the different distances,
tance of objects does not arise from any change in the figure of the eye itself proceeding from the action of its muscles, as Dr. Porteens'd imagination, though many have thought otherwise; the hardness and inflexibility of the corretoria is repugnant to any such change of figure. This change of conformation therefore must proceed, as he conceived, from some other cause, such as the contraction of the ligamentum ciliare. In flies, insects, and all animals that want eye-lids to cover and defend their eyes, the cornea also is of a firm hard substance, as Fabreius ab aquapendente has observed; and this was necessary, that it might not be hurt by particles to which, for want of eye-lids, they are exposed. This is particularly to be observed in crustaceous animals, such as the locustia, gammarus, cancer, &c. to which eye-lids, instead of being necessary, would have been hateful, and an impediment to their sight, on account of their hardness and difficulty of motion; and therefore nature has contriv'd another method for securing their eyes against external injuries, by the hardness of the cornea, which, in these animals, exactly resembles the form of a lantern. In other animals that want eye-lids, the cornea also is firm and hard, though not so firm as in crustaceous animals. But, in all animals that are provided with eye-lids for guarding and defending their eyes, such as men, quadrupeds, and fowls, their cornea is more soft and delicate.

The cornea is composed of several parallel laminae, which are nourished by many blood-vessels, so fine, as not to hinder even the smallest rays of light from entering the eye. It has a most exquisite fineness, to the end that, upon the least pain, the tears may be squeezed out of the lachrymal gland, to wash off any insult, which, by flicking to the cornea, might render it cloudy, or dim.

Mr. Winlow, having observed that the cornea, after death, is commonly covered with a kind of membrane or glairy coat, which sometimes tarnishes the eye to such a degree, that the pupil can scarcely be distinguished; and further observing, that this membrane is to be found as well in those who die with their eyes open, as shut, was hence led to suspect, that it was formed of a lymph which naturally concreted through those pores of the cornea, mentioned by Steno in his "Treatise on the Glands and Mucfeles;" and, after many fruitful attempts to discover these pores, he at last fortunately succeeded: for by pressing the eye in a certain manner, which occurred to him by accident, he could distinctly feel this liquor sweating through these pores, and form small drops upon the cornea, which gradually diffused themselves over its whole surface. (See Mem. de l'Acad. Ann. 1751.)

This glairy coat is very tender and delicate, so that it breaks into many pieces when it is touched, and is easily removed altogether by wiping the cornea. It commonly begins to be formed a little while before death; and hence the eyes lose their brilliancy, and becoming dull and lifeless assume a certain appearance, which has been looked upon as a certain sign of a speedy dissolution. It is not therefore without some reason, says Dr. Portersfield, (Treatise on the Eye, vol. i. p. 146,) notwithstanding what Plemipus says to the contrary, that Pliny (l. xxviii. c. 6.) tells us, that while the pupil reflects images, death is not to be feared. See Eye and Vision.

It is sometimes necessary to make incisions through this tunic, in order to discharge not only matter, but even blood, when extravasated by external injuries, if it will not give way to the common methods of dispersion, to prevent the flagrant blood from spattering and destroying the eye. There have been influences when this has been done with great success, and without any deformity cicatrizes, the sight having been also perfectly restored by it. See Achiws.

CORNELIAN, in Surgery, an instrument used for making an incision into the cornea, previous to the extraction of a cataract. (See Cataract.) It should be of such a width as to equal the dimension of a semi-diameter of the cornea, which is to be cut through by one incision, and not by a fee-saw division. The back of the cornea-knife, Mr. Ware observes, should never be so thin as to cut above the eighth part of an inch beyond its point; by which precaution, enough will be left of its back, in a blunt file, to secure its rim against injury.

CORNEGLIANO, in Geography, a town of Italy, in the Parmesan; 13 miles S. W. of Parma.

CORNEILLAN, a town of France, in the department of the Landes; 5 miles S. of Arc.

CORNEILLE, PETER, in Biography, a celebrated French dramatist, was born at Rouen, the 6th of June, 1606. He was brought up to the bar, but advocated only one cause, and after the death of the place, advocate general at the marble table of the parliament of Rouen, which was a kind of finescore. A trifling affair of gallantry induced him to write his first comedy, entitled "Methé:" the success of which brought him to Paris, and encouraged him to five or six attempts of the same kind. After these he ventured upon "Medea," a tragedy imitated in part from Seneca; and at the age of 31, he produced the famous tragedy of the "Cid," the principal beauties of which were, however, borrowed from the Spanish theatre. Still it raised his reputation to the highest pitch; and the enthusiastic applause with which it was received was such, that "Cela est bien comme le Cid" became the fashionable expression of the age.

Even the great cardinal de Richelieu grew jealous of Corneille's celebrity; and though he petitioned the pope, secretly joined in a confederacy against his poems. His animosity induced Corneille to write the following verses, after the cardinal's death:

"Qu'on parle bien ou mal du fameux cardinal, Ma prefe, ni mes vers en diront jamais rien, Il m'a fait trop de bien pour en dire du mal, Il m'a fait trop de mal pour en dire du bien."

To support the fame which he had so justly earned by his "Cid," Corneille produced successively the beautiful tragedies of the "Horatius," "Cinna," "Polyente," "Pompe," and "Rodogune." In 1647, he was chosen a member of the French academy. After Cinna and Rodogune, his poetical fire appeared to abate: he wrote five more tragedies, which were not so well received. The bad success of his "Pertharius," in particular, made him relinquish the dramatic career for some time, which he devoted to an excellent translation of "Kempt's Imitation of Jesus Christ." His genius, however, reformed its former bent. He produced four tragedies more, and died eight or ten years after having written "Surena," on the 1st of October, 1684, in the 75th year of his age. His works have been frequently reprinted: they consist of nine comedies, two-and-twenty tragedies, and some smaller poems. The best edition is that in 5 vols., with Voltaire's notes. Corneille left no fortune to his descendants. One of his great nieces was educated and provided for by Voltaire; and another of his distant relations, a young boy, is now receiving his education at the expense of the French government.

According to Racine, it is not easy to find a poet who united so many great talents. Corneille possessed at once skill, strength, judgment, and genius. The grandeur of the subjects
COR

jerks of his tragedies, and the manner in which he has treated them, are equally thrilling. We know not which to admire most, the vehemence of his passions, the majesty of his sentiments, or the dignity and prodigious variety of his characters. Corneille, says Dr. Blair, (Lectures, vol. iii. p. 344.) who is properly the father of French tragedy, is distinguished by the majesty and grandeur of his sentiments, and the fruitfulness of his imagination. His genius was unquestionably very rich, but seemed more turned towards the epic than the tragic vein; for, in general, he is magnificent and splendid, rather than tender and touching. He is the most declamatory of all the French tragedians. He united the copiousness of Dryden with the fire of Lucan; and he re-embles them also in their faults, in their extravagant impiety. The character of Corneille is happily contrasted with that of Racine, in the following beautiful lines of Marty, a French poet:

"Illum nobilissimae majestatis aedibus
Vertice tangencium nubes; placidus orbis
Magnanimi circum herculeos, fulgentibus amnis
Induti trabes; Polycetus, Cinna, Seleucus,
Et Cidus, et rugis insignis Hortus orae.'"

Corneille, Thomas, a French dramatist, brother to the celebrated Peter Corneille, was born at Rouen in 1615. He wrote several dramatic pieces, one of which, "Don Juan," or "Le Feu de Pierre," has kept the stage. His successes, and indeed his merit as a poet, were greatly inferior to those of his brother; yet, in compliment to the celebrity of the deceased, he was chosen to succeed the great Corneille as a member of the French academy, where he took his seat on the 2d of January, 1685. He died in 1709, and left, besides his dramatic works, a "Translation of Ovid's Metamorphoses;" "Remarks upon Vaugelas;" "A Dictionary of Arts;" and "An Unvaried Geographical and Historical Dictionary," chiefly intentioned for an accurate account of Normandy, which was his native province.

Corneille, Michel, a painter and engraver, was born at Orleáns in 1603. He became the disciple of Simon Vouet, whose manner he assiduously imitated, until his death, which took place in 1661. He painted many considerable works in the palaces and churches of France, and etched a few plates from Raphael, the Caracci, &c. Huber.

Corneille, Michel, the son of the preceding artist, was born at Paris in 1642. After having acquired the first principles of painting, under the direction of his father, he travelled to Italy, and is said to have completed his studies in the school of the Caracci, whose style of drawing, particularly in landscape, he imitated with enviable success. He painted several considerable works in the churches of Paris, and at the palaces of Fontainebleau and Versailles; and etched many excellent plates, as well from his own compositions, as from those of Raphael and the Caracci. He died a member of the academy at Paris, in the year 1703. Huber.

Corneille, Jean Baptiste, the younger brother of the preceding artist, was born at Paris in 1646, and, like him, after having acquired the rudiments of his art under his father, completed his studies in Italy. Upon his return to Paris, he was made professor of the academy of painting, and soon became an artist of some eminence. One of his principal pictures is St. Peter delivered out of Prison, in the church of Notre Dame. After the example of his brother, he etched many plates from his own compositions, and from those of the Caracci, besides part of a work reproducing the finest statues of Rome and Florence, measured and drawn from the originals. He died in 1695. Huber.

Corneille, in Ornithology, the same given by Buffon to the Corvus Corone of Pennant, Latham, &c. ; or CORVUS Corone of Gmelin.

Corneille, La, in Geography, a town of France, in the department of Calvados; 4 leagues S.W. of Falaise.

CORONEL, in Botany. See CORNUS.

CORNELIA, Ard. See AMMANIA INTENSCRA.

CORNEILL, Ard. See AMMANIA INTESIS.

CORNEILL, Caesar, in Ancient Geography, a place of Africa, near the mouth of the Bayadas. This is the place where Scipio pitched his first camp after his arrival in Africa, at the close of the second Punic war.

CORNELIUS, a celebrated Roman, and wife of Tiberius Sempronius Gracchus, who held the consulship in the year 177 B.C. By him Cornelia had twelve children, and was left, while young, a widow. To the education of her orphans she devoted her whole time and undivided attention, though only three arrived to a state of manhood, viz. Tiberius and Caile Gracchus, and a daughter, married to Scipio the Younger. These were highly indebted to their mother for the distinction and rank which they afterwards held in the commonwealth; and for them she ever felt the utmost regard. When a lady had exhibited her jewels at Cornelia's house, and begged to be indulged with the fight of her own, the affectionate parent produced her two sons, saying, "These are the only jewels that I have to shew." Too ambitious of being distinguished, she probably urged them in that career which terminated in their destruction. She is said to have reproached them in their youth, that they had not rendered her illustrious as the mother of the Gracchi; and after their untimely death, she replied to one who would have consoled her with their account, that "the woman who had given birth to the Gracchi could not be deemed unfortunate." In retirement she cultivated literature, and paid great attention to men of learning and worth; with these she would converse of her sons with tranquillity and apparent concern, as if she were contemplating some great characters of remote antiquity. After her decease, the Romans erected a statue to her memory, with this inscription, "To Cornelia, mother of the Gracchi." Plutarch. Universal History.

CORNELIAN. See CHALCEDON.

To give these stones the greater luster, in setting them they usually lay a piece of silver-leaf underneath.

The principal use made of cornelians is in seals; by reafon they are clean, and leave a fine polish.

Mr. du Fay, of the academy of Sciences at Paris, accidentally hit upon a very fine way of turning any part of a red cornelian white, so as to form veins or clouds of that colour at pleasure in it, by filling up the lines with white enamel in powder, and then putting it over the fire to melt the enamel. Mem. Acad. Par. 1732.

CORNELIAN CHERRY, See Botany. See CORNUS MAS.

CORNELL, in Ancient Geography, a place of Italy, on the Flaminian way; 26 miles from Arctium, according to the Itinerary of Antonine.

CORNELLUS, or CORNELIUS, CORNELIUS, in Biography, the same given by Lathrop to the Cornus Bicornis, &c. of Linnaeus, from the place of his nativity, was born in 1562, and studied painting under Peter the Elder, the Younger, whom he soon surpassed. He afterwards received instructions from Francis Pourbou and Gilles Coignet, and at length established the reputation of being one of the best historical painters of his school at that period. Unfortunately, however, he was prevented fulfilling his intention of completing his studies in Italy; and we have, therefore,
therefore, frequently to regret that the beautiful variations, which characterise the works of this master, should be accompanied by a style of drawing so incorrect and extravagant: a fault, however, rather of the school than of the man. Cornelio painted with equal facility both in small and large; and several of his compositions, evincing extraordinary invention, have been finely engraved by Joan Muller, J. Saenredam, and J. Matham, and are enumerated by Heinecken. He died in 1638. DeLamps.

CORNELISZ, or Cornelissen, Jacob, a painter and citizen of Amsterdam; where, according to Van Mander, he enjoyed great reputation, about the year 1610. He painted several altar pictures for the principal churches of Amsterdam, Alkmeer, and Haelem, and died at the former city, at an advanced age. The author above-mentioned informs us, that many of his works were engraved in wood. These are considered by Heinecken to be the same prints generally attributed to John Walther Van Apel, and which consist principally of twelve circular plates, representing the Passion of Christ, surrounded by ornamental borders, dated 1544, 1544; a suite of subjects from the Bible, on a smaller scale, with ornamental borders, etc. published 1573; and some foml spirited frizes and procecssions. Delamps. Heinecken.

CORNELIUS, Pope, native of Rome, and elected to his high office in the year 251, on account of his many virtues and peaceable temper; though he was opposed by Novatian, a man greatly celebrated for his learning and eloquence. This circumstance gave rise to the feot of Novatians in the churches, which, with their peculiar tenets, will be described under the article NOVATIANS. Cornelius, in this affair, seems to have lost his moderation and pacific temper, and to have resorted to the harsh arts of anathematizing and excommuniating his opponent, which proved of no avail to his cause. Under the emperor Gallus, Cornelius was banished; and in a very short time died a natural death, having lived but fifteen months after his elevation to the papal see. Moreri.

CORNENSI, a people placed by Ptolemy towards the middle of the island of Sarodnia, otherwise called Aeschilenis. CORNER-stones, among Builders, the name of the two stones which stand one in each jam of a chimney. Their faces are hollowed in breadth, being a certain sweep of a circle. The breadth of each stone is equal to that of the jam, and their height reaches from the hearth to the mantel-tree.

Corner-stones are commonly made of Rye-gate, or fire-clay.

Corner-stones, are those which appear in a horse when he is coming five years old. See Age.

CORNES DE RELIERS, ram's-horns, in Fortification, low flanks to supply the place of tenails, for the defence of the ditch. See the articles Construction, military, and Armouring a corne. or Hornwork.

CORNET, in Fortery, an instrument used in bleeding horses.

Coronet, or Coronet, is sometimes used to denote the lowest part of the pattern of a horse round the coffin.

Coronet, in the Military History of the Ancients, a horn, or musical instrument, much in the form of a trumpet. Vegetius informs us, that the legions had trumpets, cornets, and buccines; that when the corneet only was placed, the enfigs, or standard-bearers, were to move without the soldiers; but, when the trumpets only were placed, the soldiers were to advance, or move forward, without the enfigs or standard-bearers; that the cornets and buccines sounded the charge and retreat, and the cornets and trumpets at the battle. A troop of horses was also so called.

Coronet, in the Military History of the Moderns, is the third commissioned officer in a troop of horse or dragoons, subordinate to the captain and lieutenant, and equivalent to an ensign of infantry. His duty is to carry the standard near the centre of the front rank of the troop or squadron. He takes his title from his ensign, which is square, and is supposed to be called by that name, from cornet; because placed on the wings, which form a kind of points, or horns, of the army; others derive the name from coronet; alleging, that it was the ancient custom for these officers to wear coronets, or garlands, on their heads.

Coronet d'orée, a hearing trumpet, a trumpet of beaten iron, which those who go the rounds make use of for hearing over the parapet, what passes in the ditches, and even beyond the covert-way. It can also be used at night for the better hearing of, and receiving the watch-word.

Coronet, a coarse musical instrument, called in France le bouquin, or goat's horn, used by the cow-keepers to call the cattle together at milking and foddering time. An instrument called a coronet, was formerly used in the orchestra in Italy, under the name of cornetti, and cornetini, and the former was so called because of its frequency in the 16th and 17th centuries. Artusi, an intelligent writer on music, in his treatise, "Delle Imperfettione della Moderna Musica," gives a curious account of the state of instrumental music in his time; and in describing a grand concert that was made by the sons of a convent at Ferrara in 1578, on occasion of a double wedding between Philip the III. king of Spain, with Margaret of Austria, and the archduke Albert, with the infanta Isabella, the king's sister, enumerates the several instruments that were employed, and points out their excellencies and defects. Among these, though the violin is just mentioned, yet nothing is said of its properties, while the cornet, trumpet, viol, double-harp, lute, flute, and harpsichord, are honoured with particular remarks, both on their construction and use: but among these the cornet, which has been supplanted in the favour of the public by the hautbois, seems to have float the highest in the author's estimation. The elder Doni, in his dialogue written about fifty years before, mentions the cornet more frequently than any other instrument, and says: "Il divino Antonio da Corinetta, per tante volte M. Battifia il diletto corinettaro con il suo coronetti ancora; che lo fauro miracolosamente." There is a brilliant solo flog in the organ, called a coronet, confiding of five ranks of pipes; it is usually a half flog, falling down no lower than the middle C; or, at most, to F on the 4th line in the base. It is composed of a diapason principale, 1st, 2nd, 3d, and native, and major 17th; so that every note is a complete chord, such as nature gives in the harmonies to every found; but of which we can only distinguish such as are produced by the lower part of the scale.

Jack James, Magnus, and Stanley, three celebrated organists, in the early part of the last century, used to play rapid movements on the cornet, as a solo flog in their voluntaries, accompanied by the two diapasons; and, as it has no base, it should not be drawn out in the chorus, or full organ, unless the fagadaira is divided into two half flogs, and the lowest half only is drawn out as a base to the cornet.

Coronet flog, on an organ, is a compound treble flog, in the use of which each finger-key acts upon and occasions five pipes to sound, at the same time, with the union, with the note proper to that finger-key, and also with the same note in the flog, called diapason. Another which is turned a true major third above it, another a fifth, another an eighth, and the uppermost a true major seventeenth above the note. Dr.
Dr. South remarks, (Harmonics, p. 10,) that the best tuning of an organ cannot wholly prevent that disagreeable battering of the ears with a constant rattling noise of beats, quite different from all musical sounds, and destructive of them, and chiefly caused by the compound stops called the corpet and sequencer, and by all other loud stops of a high pitch, when mixed with the reed. The corpet stop is generally used in our churches, with the diapason, in the interludes, and giving-out of the psalms.

CORNETO, in Geography, a town of Italy, in the flat of the church, and province of Patrimonio, the see of a bishop, immediately held from the pope, and united with the see of Monte Fiascone; 58 miles N.W. of Rome.

CORNELLA, a town of Parma, in the province of Italy; 80 miles E. of Ispahan.

CORNELLA blanche, an ornament among the French in former times, which served to distinguish their officers, who were high in command. It was worn by them on the top of their helmets. Under Charles IX., Henry III., and Henry IV., this appellation was also given to the royal standard, and under Charles VIII. to the cornette royale. It was substituted in the room of the standard on pennon royale. But neither were unfurled except when their kings went in person to command their armies. The persons who served under it, were princes, noblemen, marshals of France, and old captains, who received their orders directly from the king.

CORNELLE (porte) blanche. This was under the later kings of France, an office in the king's household, dependent on the great rewar, who received the provisions of purveyance. The porte-cornette blanche, of the light cavalry, however, did not depend on the grand reward, but on the colonel-general of light cavalry.

As to the port-standard royale, or the bearer of the royal standard, it was incumbent on him to remain dead or alive on the field of battle. If he were made prisoner, the king paid his ransom. Every night, this standard was placed by the bed-fide of the king. This standard, or the cornette blanche royale, was simple, and without any mixture of colours, or of the fleurs-de-lis.

The cornette of the colonel-general of cavalry, in the old French service, as well as those attached to the quarter-master-general and commissary-general, ranked as lieutenants, and the cornettes of la colonelle generale des dragons, ranked as younguell lieutenants, and commanded all other cornets.

CORNELLE was also a term used by the French to denote the standard peculiarly appropriated to the light cavalry, from which circumstance cornette and troops were synonymous terms for expressing the number of light horse attached to an army. The standard, so called, was made of taffeta or glazed silk, about one foot and a half square, upon which the arms, motto, and cypher of the prince who commanded the cavalry, were embroidered. A fort of scarlet, or long piece of white silk, which forms the French colours, was tied to the cornette, whenever the cavalry went into action, in order to render the standard conspicuous for the men to rally round it.

CORNETTO, ADRIAN, in Biography, a cardinal, and surname Cattelli, from the place of his birth, was born by pope Innocent VII. in the quality of a nuncio to England, where he was made bishop, irid of Hereford, afterwards of Bath and Wells, by Henry VII. He was likewise nuncio at the court of France, and on his return to Rome, was made secretary to Alexander VI., who presented him with a cardinal's hat. He had not long enjoyed that dignity before an attempt was made to poison him by Caesar Borgia, natural son of Alexander. The pope himself felt the victim, by drinking the liquor that had been prepared for the cardinal. On the accession of Julius II. he fled for security to the mountains of Trent, but was recalled by Leo X. During this reign, he engaged in intrigues which obliged him to quit Rome, after which we have no certain account of what became of him. He was author of many works; one entitled, "De Vera Philosophia;" another "De Poeta;" a third, a poem "On the Chase." He was likewise a reformer of the barbarous Latin style, and formed his tale on the model of Cicero, and the authors of the Augustan period, with whose writings, he was conversant. Moreci.

CORN, in Ancient Geography, a people of Italy, in Latium.—Aso, a town of Sardinia, placed in the itinerary, 18 miles from Dofa.

CORNIBAT, in Geography, a large town of Turkey in Europe, in Rometa, famous for dyeing and preparing the fine purple and yellow leather of this country, which it yields in great quantities.

CORNICE, in Architecture. A word derived from the Latin cornu.s, a crowning, and used generally to denote any moulded projection which crowns or finishes the part to which it is affixed; thus we have the cornice of an order, of a pier, of a pediment, of a houfe, door, or window, &c. Every regular cutablation consists of three principal parts, the architrave, frieze, and cornice, which are placed in the order here mentioned, the cornice occupying the highest situation; (see Plates XVII., XXVIII., XIX., XIV., XXIX., of Architecture.) For the various terms of cornice depending upon the order of architecture to which they are applied, the reader is referred to the articles Doric, Ionic, Corinthian, Tuscan, and Composite Order; it remains in this place to deliver some general observations respecting the origin and application of cornices.

The cornice is an original member belonging to construction, representing the timbers of a roof projecting over, and forming a shelter to the inferior parts. The Doric, as the primitive order of Grecian architecture, bears the most clear and authentic marks of its origin, in the imitation of the forms and proceeding of wooden construction, in the composition the cornice is marked by mutules, which represent the ends of the rafters. In this imitation, the imitation is so disguised, that the foilile of the corona and the mutules have the same inclination as the roof, of which they form a part. The dentils of the Ionic order are also supposed to represent the smaller covering rafters or laths which immediately supported the tiles; and on this account Vitruvius, true to the theory of his art, condemns the introduction in the same cornice of dentils, below the mutules or modillions, and observes, very justly, that they were never so placed in Grecian buildings. The Romans, however, were not so servile, and their boil works of the Corinthian order present numerous examples of the practice reproved by Vitruvius.

The origin of cornices will point out their proper application; as they represent a roof, they ought never to be placed where some kind of a roof cannot be supposed to exist. In the hypostra temple at Paestum, a work of a more primitive character, the cells is divided by two lateral galleries of columns, two tiers in height, and the upper columns are placed immediately upon the architrave of the lower, the frieze and cornice being omitted. This example
flaws the adherence of the early Greeks to the system upon which their style was founded; they felt the propriety of omitting the representation of those parts whose type could not really exist. But the Romans, in this particular, departed from the Grecian practice, and in all their buildings containing several stories of columns, as the theatre of Marcellus, the Coliseum, the amphitheatre of Verona, we find complete orders, with entablatures, consisting of architrave, frieze, and cornice.

Modern architects have hitherto followed Roman examples; and, perhaps, in an art so much depending upon imitation and precedent, their authority may be deemed sufficient; but it must be recollected, that the Romans were themselves borrowers; and the real connoisseur and lover of his art will choose to drink at the source as possible, and often, to supply the deficiencies of examples, with the fluity of that type and system, which are above authorities.

**Cor.** **Architrave.** An entablature, consisting of an architrave and cornice, the frieze being retrenched. Architraved cornices are frequently used in situations where, for any reason, a complete entablature would be inconvenient. There is an antique example in the Carian portico at Athens. See Plate XIX. of Architecture.

**Cor.** **Block.** A cornice supported by square plain blocks; thus the Tuscan is a block cornice, of which there cannot be a better example than the church of St. Paul, Covent Garden. See Plate XIV. of Architecture.

**Cor.** **Mutilata.** The cornice proper to the Doric order.

**Cor.** **Dentil.** A cornice with dentils, proper to the Ionic order.

**Cor.** **Modillion.** A cornice containing modillions. This cornice is particularly applicable to the Corinthian order.

**Cor.** **Cantsleaver.** A cornice with cantsleavers. In establishing a distinction between this term and the last, we should say that a cantsleaver is a word not belonging to regular architecture, but is used to denote almost any kind of block or bracket, except those appropriate to the cornices of the orders, which must, however, be of a curved form, approaching to a Corinthian modillion; thus, cantsleaver cornices are generally found in buildings where columns are not used, and have frequently a greater projection than regular cornices.

The entablature of the second order of St. Paul's Cathedral, his great cantsleavers, descending quite to the bottom of the frieze; and Bernini appears to have been fond of this kind of cornice, having introduced it in the Barberini palace, and in his design for the Louvre, but these examples are not common, and must be regarded as abuses and violations of the rules of regular architecture.

**Cor.** **Coving.** A cornice which has a great cavetto, or cove in it, ordinarily lath and plastered upon brackets. Cornices of this kind are frequently found in old houses, but are only used economically, to save the cantsleavers which would otherwise be necessary to support the projection of the coves.

**Cor.** **Mutilataled.** A cornice, of which some members are interrupted or interlaced by some other object, as a window, tablet, &c.

**Cornicen.** I. t. a horn blower. Before the Romans were acquainted with the use of the trumpet, a cornicen brought sounds from the horn of a wild ox that was mounted with silver. The sound was very strong and shrill, and conveyed an order to a great distance.

This instrument, which in the eyes of many does not appear to be an invention of much consequence, was not a contrivance of the Romans themselves, who borrowed it from the Phrygians, among whom one named Marvys is said to have been the inventor.

**Corniche, glaiss of the.** See Glacies.**

**Corniche-ring, in Gunney, the next ring from the muzzle of a gun backwards.**

**Corincli, or Corinculi, in Ancient Geography, mountains of Italy near Rome.**

**Corinclus, or Corinclusensis, an episcopal town of Africa, in Mauritania Caesariensis.**

**Corinclusa, an instrument made of horn, almost in form of a cupping-glass, except that at the more flender extremity there is a small perforation. The wide end is laid upon emaciated parts, and a person applying his mouth to the perforation at the small extremity, by suction draws out the air. In consequence of this the part covered rises into the hollow of the instrument; and by this means the nutritive juices are thought to be invited to the emaciated part.**

**Hilacus, cent. 1.** _obf. So, relates a cure performed by this means, and gives a figure of the instrument. Tullius, lib. iii. _obf. 49, gives another influence of a cure performed by this means.

This instrument was by the ancients esteemed a species of cupping-glass.

**Corinclusani, in Ancient Geography, a place of Italy, between Folia Cladia, Ravenna, and Pavia, according to the table of Peutinger.**

**Corinclusaria, in Botany, a genus formed by Achard for some of the lichens of Linnæus, with the following character. Stems solid, stiff, smooth, branched like a shrub and stretched out on the ground. It contains L. trifolium, lanatus, pubescens, &c. See Lichenes.**

**Corinclusarlis praecox, the precox, or knob, of the shoulder-bone; thus called, as resembling the figure of a crow's beak.**

**Corinclusarius, in Antiquity, an officer in the Roman army, whose business was to aid and assist the military tribune in quality of lieutenant.**

The _corinclusarius_ went the rounds in lieu of the tribune, visited the watch, and were nearly what the aids-major are in the French army.

The denomination _corinclusarius_ was given them from a little horn, called _corinclusum_, which they used in giving orders to the soldiers; though Salmarius derives it from _corinclusum_, the crest of a head-piece; it being an observation of Pliny, that they wore iron or brass horns on their helmets; and that these were called _corinclusa_. In the _Notitia Imperii_ we find a kind of secretary, or regifter, of the same name. His business was to attend the judge, and enter down his sentences and decisions.

The _corinclusarius_ derive the word, in this sense, from _corinclusum_, a little horn to put ink in.

**Corinclusal Flowers, in Botany. See Flowers.**

**Corinclusate Plants, are such as, after they have blown into flower, produce many dillinet and horned pods, or seed-vessels, called _siliques_, for which reason the plants are also, by some, denominated _siliquose plants_.**

Such are, the _sedum_ or _femerviellium_, telephium, juncus _floridus_, helioborus _niger_, _paeonia_, _calthæ palustris_, _altheæ luteæ_, &c.

**Corinclusum, Lat. a little horn.** This appellation was also given to a species of horn of iron or brass added to the helmet as a military ornament, which was given to Roman soldiers, who had given liking proofs of their bravery or courage.
COR

CORNICULUM, in Ancient Geography; a town of Italy, in Latium; which did not subsist in the time of Pliny.


Gen. Ch. Cal. campaeolae, obtuse trigonous, permanent. Cor. Petals four, concave, filiform, caducous, fixed to the edge of the calyx. Stamin. eight, fixed to the edge of the calyx. Pyl. Germ superior, divided into three parts; styles three, permanent; stigmas simple. Peric. Capsule tricoccous, three-horned, three-celled, Seeds numerous, wedge-shaped. The only species known is a tree, native of Peru.

CORNIGLANO, in Geography, a town of Italy, in the principality of Piedmont; 5 miles W.N.W. of Alba.

CORNIGLON, a town of Italy, in the Marches; 15 miles E. of Milan.

CORNILLIA, a town of Genoa; 4 1/2 miles S.W. of Spezz.

CORNILLON, a town of France, in the department of the Gard, and district of Uzes; 7 miles S.W. of Pont St. Espirit.

CORNIMONT, a small town of France, in the department of the Vosges, in the district of Remiremont. It has 1703 inhabitants, and is the chief place of a canton which contains ten communes and a population of 12,078 individuals upon an extent of 215 square kilometres.

CORNISH, in Geography, a township of America, in Cheshire county, New Hampshire, on the E. bank of Connecticut river, between Claremont and Plainfield, about 1 1/2 miles N. of Charlestown, and 16 S. of Dartmouth college. It was incorporated in 1763, and in 1790 contained 932 inhabitants.

CORNISH, see Cornice.

CORNISH, in Zoology. See Coracias.

CORNISH diamond, a name given by many people to the crystals found in digging the mines of tin in Cornwall. These crystals are of the nature of the Kerry stone of Ireland, but somewhat inferior to it: they are usually bright and clear, except toward the root, where they are coarse and foul, or whitish. They are usually found in the common form of a hexagonal column, terminated at each end by a hexagonal pyramid.

CORNISH, in Phylogeny, a dialect of the ancient British language. The Britons, on the arrival of the Saxons, being driven into countries remote from each other, their language would, in process of time, become differently written and pronounced, and mixed in different degrees with other languages, so as to constitute the Armoricans, Welsh, and Cornish, which seem to have never been radically distinct, for those who are versed in any one of these can interpret the others with tolerable facility. (See Gough's Camden, vol. i. p. 11.) The Cornish Britons, from the fourth or fifth century downwards, maintained an intimate correspondence with the natives of Armorica, whether a colony of the Kelites had migrated during the destruction of the empire; intermarrying with them, and perpetually resorting thither for the education of their children, for advice, for procuring troops against the Saxons, for the purposes of traffic and various other occasions. This connection was so strongly kept up, that an ingenious French antiquary (M. l'Abbe Bertell) supposes that the communication of the Armoricans with the Cornish had chiefly contributed to give a roughness or rather harshness to the Romance or French language in some of the provinces, towards the 11th century, which was not before discernible. This intercourse will appear more natural, if we consider, that not only Armoricans, a maritime province of Gaul, never much frequented by the Romans, and at the time to which we now refer totally deserted by them, was still in some measure a Celtic nation; but that also the inhabitants of Cornwall, together with those of Devonshire, and of the adjoining parts of Somersetshire, intermixing in a very slight degree with the Romans, and having suffered fewer important alterations in their original constitution and customs from the imperial laws and police than any other province of this island, long preferred their genuine manners and British character; and forming a sort of separate principality under the government of a succession of powerful chieftains, usually denominated princes or dukes of Cornwall, remained partly in a state of independence during the Saxon heptarchy, and were not entirely reduced till the Norman conquest. A slight intercourse was upheld between Cornwall and Wales, as well as between the former and Armorica. Their languages, customs, and alliances, were the same; and they were separated only by a narrow strait of inconsiderable breadth. Cornwall is frequently styled the Wales of the British writers. At the invasion of the Saxons, both countries became indiscriminately the receptacle of the fugitive Britons. We find the Welsh and Cornish, as one people, often uniting themselves as in a national cause against the Saxons. They were frequently subject to the fame prince, who was sometimes chosen from Wales and Cornwall, but sometimes from Armorica, and sometimes adjudged to either nation; and sometimes in Cornwall, and the kings or dukes of Cornwall were perpetually sung by the Welsh bards. Traditions about king Arthur, to mention no other influences, are as popular in Cornwall as in Wales; and most of the romantic castles, rocks, rivers, and caves, of both nations are alike at this day distinguished by some peculiar achievement, at least by the name, of that celebrated champion. Hence we can at no loss to assign a reason, why Cornwall, in some of the French romances, is made the scene and the subject of so many romantic adventures. Hence also Cornwall, in particular, retained its old Celtic dialect till the reign of queen Elizabeth. No traces, however, of the old Cornish language now remain, and it must have been nearly, if not wholly, extinct, for a long time; as Mr. Ray could not meet with more than one person who wrote it long ago as the year 1662. Indeed, Mr. Barrington was fortunate enough to find an old woman, who spoke it very fluently, when he visited this county in 1703; and this woman was living at the age of 90 years in 1776. (Archaeol. vol. iii. s.) But the language was not wholly lost with her, for Mr. Ferguson, and Dr. Petye in his "Archaeologia Cornu-Britannica" published in 1790, informs us, that at Moulheir near Penzance there was a fisherman in 1776, 65 years of age, who had written a letter both in English and Cornish, and who spoke the language very readily. In this village there were also four or five other persons, capable of conversing in Cornish. This fisherman informed Dr. Petye, that being at Morlaix, on board a smuggling cutter, he was much surprised to find, that he understood, without knowing a word of French, part of the conversation of some boys at play in the streets; and on further inquiry, he found that he could make known all his wants in Cornish, and be better understood than he could at home, when he used that dialect. Many causes have contributed to occasion the extinction of the Cornish language. In this language there are extant no more than three or four books; one of them is a MS. found in the Cotton library, about 900 years old, from which time no other MS. appears, till about the 15th century, when one occurs exhibiting three interludes taken from Holy Writ, the originals of which, with two or three more, are in the Bodleian library. Besides, the cessation of the intercourse and correspondence with the people of Bretagne under Henry VII., and...
and the jealousies that have existed between the natives of this country and Wales, since the latter has become a mining country, have been the means of confusing the Cornishmen to a communication in their original language only with each other. Whereas the Welsh, having had much less intercourse with their neighbours than the people of Cornwall, we cannot be surprised that the language of the former has survived that of the latter. The Cornish have contended, that in sweetness of sound they excel the Welsh, as in the word "Stone," which they call "Lêh" and the Welsh "Lech," but the Welsh do not submit to this award; alleging that notwithstanding the multiplicity of gutturals and consonants with which their language abounds, it has the softness and harmony of the Italian, with the majesty and expression of the Greek.

CORNITO, in Geography, a town of Naples, in the province of Principato Città; 7 miles S.S.W. of Cagnano.

CORNIX, in Ornithology, Cornicella mandata of Buffon, the Rayfin crow of Albinus and Wulfligh, the hooped crow of Pennant and Latham, and the Corvis Cornix of Linæus and Gmelin. This is also a name given by Gesner, Aldrovand, Ray, and Buffon, to the Corvus Corone. The Cornix Cornix of Gesner is the Roller of Pennant, &c., and the Coracias garnula of the Linnean system. The Corvix atratus, with yellow head, neck, and breast, is the Carouge de Caume of Buffon, the yellow-headed flarking of Edwards, the yellow-headed oriolus of Latham, and the Ornolus interocephalus of Gmelin.


When any other key than C is required, it is expressed at the beginning of the piece, by indicating the player, that it is a D, an Eb, an F, or G horn, that is wanted.

CORNAGAL, in Geography, a town of the island of Ceylon; 30 miles N.N.W. of Colombo.

CORNQUAILLES, a country of France, so called before the revolution, in Bretagne.

CORNU, in Ancient Geography, a place, according to Plutarchus, in the isle of Lemnos. Melis and Pliny call also by this name two promontories of Italy, one in the country of the Bruth, the other in that of the Scelentini.

CORNU Ammonis, in Natural History, an extraordinary kind of bone, some of which in vinegar, juice of lemons, &c. have a motion like that of an animal.

It is rough, knotty, of an ash-colour, and twirled in manner of a ram's horn; such as those whereabouts the ancient represented Jupiter Ammon; whence its name.

It is disputed, among naturalists, whether it be a native fossil, a nautilus, or a rock-plant? Camerarius maintains the first; urging that it is frequently dug out of the tops of mountains; and that it is seldom found near the sea-shore.

Dr. Woodward affirms it a shell, and of the number of the nautilus, formed in the sea, and carried thence, by the waters of the deluge, into the countries whence it is one. He argues, that if it be rarely found on the sea-coasts, it is because shells and other bivalves lying in the bottom of the sea, as most kinds of the corona Ammonis must do, are only to be found thence, and driven thence by tempests: but the most violent tempests never move the bottom of the sea, as the divers have put past doubt; so that it is no wonder if none of these corona be thrown up; but in the overturning of the earth by the deluge, these, with a thousand more productions of the sea, might be thrown from the bottom of the waters to the places where they are now found.

The corona Ammonis are of different thicknesses and lengths; some of them weigh twenty pounds. They are found in several places in Germany, and elsewhere. From some experiments that have been made, some of them are found to contain a little quantity of gold, which sink to the bottom upon pounding them small, and floating them in a running water, till all the earthy parts be carried off. Mr. Beaumont's account of them is to be seen in the Phil. Trans. N. 129. See Snakes-foam.

CORNU Ammonis, in Anatomy, is a term applied to the great hippocampus. See Brain.

CORNU cervi, hart's horn, in Medicine, makes one of the tallowy powders. See Hart's Horn.

Among chemists, the same name is used for the mouth of an elenbe.

CORNUA of the ox hyoidea, in Anatomy, are the two lateral portions of this bone The corona minora, or cornicina, are the two small portions of bone, which rest on the junction of the bals with the corona. See Larynx.

CORNUA pericardi; are the angles, formed where the bag of the pericardium is reflected over the root of the pulmonary artery and sorts, in its course to the surface of the heart itself. See Heart.

CORNUA of the lateral ventricles; a term applied to the different
different portions of these cavities; each of which has an anterior, a posterior, and an inferior or reflected, or defending horn. See Brain.

Cornus, L. There were what the Romans called the horns of an army, literally speaking, and what we call the right and left wings. The cornus erectus were composed, according to Polybius's account of the auxiliaries or allies, one half of them forming the right wing, and the other half the left wing, of a Roman army. They also encamped on the right and left of the Roman regions.

Corucox, among the Ancient Poets, a horn, out of which proceeded plenty of all things: by a particular privilege which Jupiter granted his nurse, supposed to be the goat Amalthea.

The real fane of the fable is this: that in Libya there is a little territory shaped not unlike a bullock's horn, exceeding fertile, given by king Ammon to his daughter Amalthea, whom the poets feign to have been Jupiter's nurse.

In Architecture and Sculpture, the corucox, or horn of plenty, is represented under the figure of a large horn, out of which little fruits, flowers, &c. On medals, F. Joubert de Becevres, the corucox is given to all deities, genii, and heroes.


Gen. Ch. Involute one-leaved, funnel-shaped, many-flowered; mouth crenate, obtuse, spreading-crec. Cal. glume one-flowered, two-valved; valves oblong, obtusely acuminate, equal. Cor. one-valved; in figure, size, and situation much resembling the valves of the calyx. Stam. Filaments three, capillary; anthers oblong. Pfl. Germ superior, top-flapped; styles two, capillary; stigmas cirs. Peric. none; corolla including the seed. Seed foliary, top-flapped, convex on one side, flat on the other.


Sp. C. excallatum. Linn. Sp. Mart. Lam. Wild. (Juncus maritimus vaginatus; Pet. gaz. tab. 75: fig. 5). Gramen orientale verum; Schenck. Gram. 117.] Root annual. Culms fnder, jointed, bent at the joints, and dark purple, smooth, fritated, a little branched. Leaves narrow, fritated, smooth; sheaths inflated, spreading, pointed, stipule foliary, entire. Peduncles two or three, arising from the sheaths of the upper leaves, about an inch long, a little curved downwards, supporting the common involucre. A native of Afa Minor about Smyrna, introduced into England by Sherard, and sent to Linneaus by Haffelquif. One of the rarest and most singular of the grammean plants.

C alpescrimeiis. Linn. See Phalaris uricula and Dr. Smith in Linneian Transact., vol. vii. p. 245.


Drupe roundish, umbilicated, succulent; nut egg-shaped, two-celled. Seeds one in each cell.


Flowers umbelied, with a four leaved, coloured, involucr. Cornoulles. Fr. the male cornels of the old Botanists.

Sp. 1. C. mascula. Linn. Sp. Pl. 2. Mart. 2. Lam. 1. Ill. Pl. 116. fig. 7. Wild. 4. Gart. tab. 26. fig. 2. (a). C. fylefiris mas. £. hortenias mas. v. hortenias mas. fructu ceru coloris. Bauh Pin. 447.) Cornelian cherry. "Arboraceous; involucr nearly equal to the umbell." In its wild state a shrub, four or five feet high; cultivated, a tree twenty feet high; young shoots circular, pubescent, gently quadrangular. Leaves opposite, egg-shaped, acute, entire, somewhat hairy underneath, nerved, on short petioles. Flowers appearing early in spring before the leaves; yellow, leaves of the involucr lanceolate, olenia reflexed; peduncles one-flowered, forming an umbel of from fifteen to twenty rays, a little longer than the involucr. Fruit oblong, about the size of an olive, generally bright scarlet, sometimes yellow, or wax-coloured. A native of woods and hedges in the nouth of Europe, very common in English plantations. The fruit has an all-ingenious, and may be eaten either raw or in tarts; a rob made of it was formerly kept in the shops. The wood is highly recommended for its durability in wheel-work, pins, and wedges, and is said to last like the harden iron. It figures under the shade of other trees. 2. C. florida. Linn. Sp. Pl. 1. Mart. 1. Lam. 2. Wild. 5. Bot. Mag. 826. Virginia dog-wood. (C. mas virginiana; Pluk. Alm. 110. tab. 26. fig. 3. Catech. Car. 1. tab. 27.) "Arboraceous; involucr very large, indented at the tip." A tree from ten to twenty feet high; trunk from eight to ten inches in diameter. Leaves opposite, larger than those of the preceding species, egg-shaped, acute or acuminate, green above, glaucous underneath, petioled. Flowers small, yellow; leaves of the involucr two inches broad or more, greenish white, sometimes rose-coloured, ressembling petals, a little tomentous, ending in a short point, and appearing as if nipped almost double near the tip, which makes them seem marginal, and heart-shaped; peduncles one-flowered, forming clove lateral and terminal umbels. A native of Virginia. In France and England it is seldom more than five or six feet high; but in the duke of Marlborough's garden at Sion-hill, there is a plant at least sixteen feet high, with a straight trunk about six feet in length before it branches, and bearing two feet in circumference a yard from the ground; it has long flowered freely, but has never produced fruit. The fruit in its native country is red, about the size of a haw, and is eaten by the celebrated mocking bird, Tardus Orpheus of Linneus. 3. C. suecica. Linn. Sp. Pl. 4. Mart. 8. Lam. 1. Flor. dan. tab. 5. Eng. bot. 310. (Periclymenum humile; Bauh. Pin. 305. Chamerion periclymenum; Chl. pann. 87. tab. 88.) "Herbaceous, branches in pairs; umbel between the branches, peduncled; all the nerves of the leaves nearly distinct." Root perennial, creeping. Stam. about six inches high, erect, quadrangulier, leafy, bind near the top. Leaves opposite, almost felfile, oval, acute, entire, smooth; all the nerves springing nearly from the base, and running nearly parallel. Flowers dark purple, small; leaves of the involucr large, white or reddish, permanent, finally becoming green and much enlarged; pedicels short, one-flowered. Drupes globular, red, sweetish. A native of the northern parts of the Old Continent; rare in England having hitherto been found only in the hole of Horcum between Pickering and Whitby.
COR

Whitby in Yorkshire, about Castle dean in Devon, and on the Cheviot hills in Northumberland. In the Highlands of Scotland not uncommon, where the berries are eaten by children. C. canadensis. Linn. Sp. PI. 5. Mart. 9. Lam. 5. Willd. 2. P. Hert. Corn. tab. 1. Bot. Mag. 882. (Pyrola alba fleure; Bauh. Pn. 191.) "Herbaceous; not branched; leaves in a single whorl at the top of the stem, on short petioles, veined in various directions from the midrib; umbel penduncled, rising from the centre of the whorl." Root perennial, creeping. Stem from six to eight inches high, naked below, with the exception of two opposite stipules a little below the middle. Flowers small, white, with a violet-coloured bottom: leaves of the involucre large, ending abruptly in a point, white, sometimes red at the tip; pedicels one-flowered, short. A native of Canada.

"Flowers in a cyme, not involucrated; Sanguis. Fr. so called because the branches are red. The female cornels of the old botanists.

5. C. janguinia. Linn. Sp. PI. 3. Mart. 4. Lam. 6. Willd. 2. P. Hert. Corn. tab. 481. Eng. Bot. 2.299. Geiss. tab. 26. fig. 1. Lam. III. Pl. 74. fig. 1. (C. fumaria; Bauh. Pn. 447.) "Branches erect; leaves egg-shaped, green on both sides; cymes deprefsed." A shrub from five to ten feet high; branches numerous, long, cinerous, but blood-red as they grow old, especially in winter. Leaves opposite, petioloed, egg-shaped, quite entire, smooth, veinless, becoming red late in the autumn, deciduous. Flowers greenish-white, with an unpleasant smell; petals revolute at the edges; gern crowned with a globular ring, into which the petals and flaments are inserted. Drupes globular, dark purple, very bitter, oily, rhtitic. Common in England and other parts of Europe. C. alba. Linn. Mant. 49. Mart. 5. Lam. 7. Willd. 7. (C. fylvefris fructu albo; Aum. Ruth. 198. tab. 32. Mill. Pl. 104.) "Branches recurved; leaves broad-egg-shaped, hoary underneath; cymes deprefsed; berries white." A shrub from six to nine feet high; branches smooth, cinersous in summer, red in winter. Leaves opposite, petioloed, ending in a point, larger than those of the preceding species, smooth on both sides, nervet. Flowers white, in terminal cymes; ring surrounding the gern purple. Drupes globular, of a transparent white colour. A native of Siberia and Canada. 7. C. fucica. Linn. Mant. 109. Mart. 6. Willd. 8. P. Hert. tab. 2. (C. ammonum; Mill. Vogel. ic. rar. tab. 101. C. canula; Lam. III. 1533. C. fumaria baccis carnulo-viridibus; Gron. Virg. 20. C. rubiginosa; Elhr. Beitr. 4. 15. C. americana baccis carueli coloris; Pluk. aln. 121. tab. 169. fig. 3.) "Branches spreading; leaves egg-shaped, furruginous silky underneath; cymes deprefsed; fruit blue." A shrub fix feet high. Stem erect, cylindrical; branches opposite, dekty-purple; flowers on a ring at the joints, dark red. Leaves acuminate, entire, nervet. Flowers white. A native of North America. 8. C. cirtinata. Willd. 9. P. Hert. Corn. tab. 3. (C. rugosa; Lam. 8. III. 1571.) "Branches warty; leaves orbicular, tumulous, hoary underneath; cymes deprefsed." A shrub fix feet high. Stem upright, grey; branches opposite, somewhat spreading, cylindrical, green, with brownish wafts; flowers with rings at the joints, purplish. Leaves three inches and a half long, and as many broad, opposite, ending in a point, smooth on both sides, wrinkled, nervet; petioles an inch long, semi-cylindrical, channelled. Flowers white, in terminal cymes; bracteote two, bristle-shaped, situated near the base, or about the middle of two of the rays of the cyme. Drupes hollowed at the base, retaining the style, soft, pale blue, turning whith. A native of Pennsylvania. 9. C. florid. Mart. 11. Lam. 11. Willd. 12. P. Hert. Corn. tab. 4. "Branches stiff and straight; leaves egg-shaped, green on both sides, almost naked; cymes panicled." A shrub, fifteen or sixteen feet high. Stems fervus, upright, brownish; branches long, quite smooth, purplish, and somewhat angular near the top. Leaves opposite, petioloed, acuminate, smooth, and fining on both sides, entire; petioles creet only one-sixth the length of the leaf, ghobous on one side, channelled on the other, purple. Flowers white; others pale blue, gern with a nectarous crown. Drupes folt, blue. A native of North America. 10. C. paniculato. Mart. 12. Willd. 11. P. Hert. Corn. tab. 4. (C. racemosa; Lam. 101.) "Branches erect; leaves egg-shaped, hoary underneath; cymes panicled." A shrub fix or five feet high. Stems numerous, much branched, cylindrical, grey; younger branches reddish-green, slightly angular. Leaves opposite, petioloed, smooth, nervet. Flowers white, in nearly conical panicules; filaments yellowish white; gern with a purple crown. Drupes white, retaining the style. A native of North America. 11. C. altirnifolius. Linn. jun. Supp. 125. Mart. 7. Lam. 10. Willd. 12. P. Hert. Corn. tab. 6. "Leaves alternate." A shrub five or fix feet high. Stem single; branches only from the upper part of the stem, spreading, cylindrical, smooth, and even; younger ones purple-violet, sprinkled with oblong, greyish dots or small lines. Leaves irregularly alternate, ovate-lanceolate, acute, entire, on rather long petioles, smooth, bright green above, whitish underneath, with lateral converging nerves. Flowers white, in a loose terminal cyme. Drupes globular, violet-coloured. A native of North America.

Propagation and Culture.—All the species may be raised from seeds, which should be sown in the autumn, soon after they are ripe. The shrubby ones are easily propagated either by transplanting the suckers or laying down the branches; but the layers produce the best plants.

Cornus japonica; Thumb. See Viburnum cornifloro.
Cornus mas odorata; Pluk. Catel. See Laurus siliquastrum.
Cornus racemosa trifida; Plum. See Amyris elmisera.
Cornus sylvosiris, folia crococalium colorum tingentibus; Burm. See Memecylon capitatum.
CORNUS, or Cornos, in Geography, a town in the island of Sardinia, marked in the itinerary of Antonius, on the route from Tibuli to Sulci, between Bafa and Thars; now 15 miles S. E. of Bafa.
Cornus, a small town of France, in the department of the Aveyron. It contains 931 inhabitants, and is the chief place of a canton, in the district of St. Affrique. The extent of the whole canton is 347 kilometres and a half. The number of its communes is 10, and that of its inhabitants 6360. Alto, a town of France, in the department of the Loir; 10 miles E. of Cahors.
Gen. Ch. Cal. one-leaved, very small, five-toothed, permanent. Cor. monopetalous, tubular, two-lipped; tube cylindrical; upper lip with three nearly equal lobes; lower lip, three-lobed, the two lateral ones very small. Stam. filaments four, two of them projecting out of the flower. Filia, gern roundish; style very long, bisid. Peric. drupe globular, Vent.
Eff. Ch. Calyx five-toothed; two of the flamen projecting out of the corolla. Style very long. Drupe globular.


Propagation and Culture.—The first species has long been propagated in England and France. It is raised from seeds sown early in spring on a hot-bed. The plants should be transplanted into pots, first smaller, and afterwards larger, according to their growth, and kept in a hot-bed of tanners bark, with a liberal allowance of water. In October they should be removed into the tan-flake, where they should remain in a moderate degree of heat during the winter. The third year they will flowar and make a handsome appearance, but have never ripened their fruit in Europe. The plant may also be propagated by cuttings.

The cuttings should be made from proper shoots, and be planted in pots of light earth, at the same season, and managed afterwards in the same manner as those by seeds.

These shrubby plants afford a variety, when placed in embellishment with other exotics.

**CORNUTIA corylofo; Lam. See Callicarpis lanata.**

**CORNUTIA corylofo; Burm. See Premna integrifolia.**

**CORNUTIOIDES, Flor. Zeyl. See Premna ferratifolia.**

**CORNUTUS**. See Dilemma.

**CORNUTUS**, in Biography, a flaco philosopher, who flourished at Rome, was preceptor to the poet Perius, and himself esteemed as a poet, a grammarian, and flaco philosopher. He was one of the many victims sacrificed to the fury of the bloody Nero. A. D. 54. Moreti.

**CORNUTUS pfeis, in Ichthyology, a species of Balistes.** See Diaculeus.

**CORNWALL**, in Geography, the name of the most westerly county of England, is nearly infaluated by water; having the British Channel on the south, and the Britol Channel on the north; both seas seeming to meet near the point called the Land's End, at the extremity of the promontory on the west: on the east it is separated from Devonshire, by the river Tamar, and an artificial boundary of a few miles at the northern extremity. From this boundary the land continually contracts its breadth to the westward, assuming something of the appearance of a cornucopia. The widest part of the county, from Morvintow on the north, to the Rame-Head on the south, is about forty-three miles, but, from its rapid contraction, twenty miles may be considered as a medium. The coast from Mount's bay to St. Ives, it is not more than five and a half miles across. The breadth of the north-west side from Morvintow to the Land's End, is about ninety miles. The circumference is estimated at two hundred. There is a tradition that a considerable tract of land, named the Lioufer, formerly connected with this county, and extending towards the isles of Scilly, was, at a very remote period, ingulfed by the ocean.

The original British name of Cornwall appears to have been *Cernuw*, i.e. a horn or promontory; and, is supposed, by Dr. Borlase, to have been changed, by the intercourse of the natives with Romans, into the Latin term *Cornubia*, which it retained till the Saxons imposed the name of *Weaks* on the Britons, driven by them west of the rivers Severn and Dee, calling their country in the Latin tongue, Wallia; after which, finding the Britons had retreated, not only into Wales, but into the more western extremities of the island, the Latins changed *Cornubia* into *Cornwallia*; a name not only expressive of the many natural promontories of the country, but also that the inhabitants were Britons of the same nation, and that as the defiles of Wales; and from this Cornwallia, is derived the present name Cornwall.
winds, prevent the growth of trees on the coasts; and it is only in the sheltered vales that the ancient natural woods are to be found. The attempt to raise plantations, in situations exposed to the south-west and northerly blasts, was hardly ever successful till within these few years, when more promising indications have attended it; the pine after being first planted as a shelter to the tender trees. The art of husbandry appears to have been but little practised in this county, to late as three centuries ago. Their ground," says Mr. Crew, "is as low in common, or only divided by the meads, and their bread corn very little; their labour heroes were only freed before; and the people devoting themselves entirely to till, their neighbours in Devonshire and Somersetshire hired their pastures at a rent, and hired themselves with the cattle they brought from their own homes, and made a profit of the Cornish, by cattle fed at their own doors. The same persons also supplied them at their markets with many hundreds of quarters of corn, and horse-loads of bread." Borlase, in his observations on this subject, remarks, that "the people increasing, and the mines sometimes failing, the Cornish felt the necessity of applying themselves to husbandry; and their improvements answered their expectations; for, in the latter end of the reign of Queen Elizabeth, they found themselves in a capacity not only to support themselves, but also to export a great quantity of corn to Spain and other foreign parts." The agriculture of Cornwall is, not withstanding, till but a secondary object. The portable commodities of the county are chiefly carried on the pack-saddle; and the hills and steep ascents rendering the use of four-footed animals necessary, the breeding of mule has been successfully attended to. Great numbers are employed in carrying the produce of the mines: the price of a good mule is frequently eighteen or twenty guineas. The common horses, though small, are hardy and well adapted to a hilly country. The vegetable foods are extremely various, but their general distinctive characters may be arranged under the heads, black growth or grunty, and the fiery or stilly foot. The former abounds in the high lands, the upperfratum chiefly confining of a light black earth, intermixed with small gravel, the druritus of granite or growan, and hence the soil receives its appellation. This fratum, on the tops and sides of mountains, is very shallow, and of not considerable depth even on the more level and extensive wakles: its natural produce is a thin broom, ath, and the dwarf, or Cornish furze. A fratum of a cubical shape is generally found beneath of various edges, and from four to eight inches thick; and below this a whithish or yellowish loamy clay. By digging up the quartz, and intermixing under the fratum of clay with the growan earth on the surface, a prolific soil is produced, fit for any kind of herbs. The coasts of Cornwall abound with a great variety of fish; one species of which, the pilchard, is taken in sufficient quantity to constitute a considerable and productive branch of commerce. See Pilchard.

"The sea," says Borlase, "is the great flore-houfe of Cornwall, which offers not its treasures by piece-men, nor all at once, but in succession: all in plenty in their several seasons, and in such variety, as if nature were solicitous to prevent any excess or superfluity of the same kind." In this author's "Antiquities of Cornwall," the numerous species of fish that visit this coast are particularly described. The seas-founds round Cornwall probably exceed in variety those of any other county in Great Britain; the sand of every cove being different. The sand of a particular shore, cave, or bay, has generally the same colour; and a microscopic shews it to be of the same substance as the adjacent cliffs, and the Ilrata under the sea. Clays are found in this county in great variety, and many of them are eminently useful for different purposes of manufacture. The yellow clay, in St. Kevern's parish, is esteemed but little inferior to any, for calking in silver, brass, or lead; the yellow clay from Lanthan is much valued for building furnaces, as the bricks made with it are supposed to have a peculiar faculty of withstanding intense heat.

The mineralogical fabulances of Cornwall are far more abundant than those of any district of the same extent in the world; and the scientific inquirer finds in their beauty and rarity a proportionable field for his researches. Among the rocks claiming especial notice, is granite, or, as here called, moon-flone, of which this county affords more than any other part of England. It forms the chain of mountains, which, commencing at Dartmoor, runs through Cornwall to the sea at the Land's End, and to the northward and southward goes into primitive schists. Granite is an aggregate of teffpar, quartz, and mica; and the varieties found here are innumerable, both in the size and colour of its component parts. Between the town of Liskeard and the river Tamur are some quarries of frite; whence the inhabitants of Plymouth are supplied with covering for their houses, and for the purpose of exportation. The free-flone is of two sorts: one composed of sand and argil, the other of sand and quartz: that of the purest quality is found in the parishes of Carantor and the Lower St. Columb, and approaches to the Portland and Bath flones. The Polrison or Pentowan flone is likewise of a sandy nature: it lies in irregular masses of three different colours, in a sheathing lode about 15 feet in width. A curious production, called the fowimming-flone, has been discovered in a copper mine near Redruth: it is of a yellowish colour, and consists of quartz in right-lined laminæ, as thin as paper, interlacing each other in all directions, but leaving unequall cavities between them: this cellalar structure renders the flone so light, that it swims on water, whence it obtained its name. Some beautifully transparent quartz are found here, crystallized in six-sided pyramids, with a correspondant hexagonal primum. That part of the county which forms the Lizard Point is composed of serpentine and hornblende of the most beautiful kind, including every shade of green, from pea-green to black, variegated by tints of purple and scarlet. The serpentine is occasionally interflect with veins of the flintites, so called from the Greek word for tallow, to which it has some similarity. But this various fabulence is contained in the greatest abundance in the celebrated foap-rock, situated between the Lizard and Mullion: it is of a whithish or flaw colour, with veins of green, red, and purple. When embedded in its matrix, the serpentine, it feels wet, and may be compressed with the hand; but being exposed to the air, becomes indurated, and of a foapy texture. The whole foap-rock is rented by the proprietors of the porcelain manufactury at Worcester. It is remarkable, that letters written with foap-flone (flintites) upon glass, though insensibly fixed, are not to be moved by washing, but always appear on being moistened with the breath. Solid albeitus is often seen adhering to the pure specimens of the flintites, and is also spread, like a thin ulm of enamel, on the surface of some rocks exposed to the sea. The fibrous albeitus has been discovered in St. Cleer's parish, fixed to stones of the killas kind, and sometimes running through them in a wavy line. But the most important of Cornish faftites is the chine flone, obtained in the parish of St. Stephen, near St. Austell, and forming a principal ingredient in the Staffordshire pottery. It is a decomposed granite, the felpar of which is deprived of fulbility. Its qualities were, about 40 years ago, discovered by chance, and it has since been an article of considerable traffic;
CORNWALL.

Traffic; many ship-loads being annually sent from a small sea-port called Charles-Town. Retorts and crucibles of an excellent fire-proof nature have been manufactured from it at Truro.

The chief object of consideration, in the history of Cornwall, is its enormous mines, which have supplied thousands of its inhabitants with employment for many centuries; and in remote periods contended, by their produce, the chief staple of British commerce. At present these subterranean sources afford very considerable revenues; and the trade to which they give birth, considered in a national light, is of the highest relative consequence. "In a narrow slip of barren country," says the author of the General View of Cornwall, "where the purposes of agriculture would not employ above a few thousand people, or mines alone support a population estimated at nearly 62,000, exclusive of the artisans, tradesmen, and mercantile, in the towns of St. Austell, Truro, Penryn, Falmouth, Redruth, Penzance, and some others." The number of men, women, and children, whose subsistence is derived immediately from the mines, by raising, wailing, stamping, and carrying the ore, is reckoned at 14,000.

The principal produce of the Cornish mines is tin, copper, and fome lead. The frata, on which these metals are found, extend, in a direction from west to east, from the Land's End entirely through the county into Devonshire, where, and in the eastern parts of Cornwall, immense quantities of tin were formerly raised: but the chief feat of mining now lies in the neighbourhood, and to the westward of St. Austell; whence to the Land's End the principal mines are to be found, extending along the northern coast, and keeping a breadth of about seven miles. Most of the metals are found in veins or fissures, which are here called lodes. These fissures have generally an east and west direction; but differ in breadth, depth, and length, as well as in the density of their silver or veins.

The most valuable metal produced in Cornwall is tin, which is sometimes found collected and fixed, at others loose and diluted. In its fixed state, it is either in a lode or floor, which is an horizontal layer of the ore; or intermixed in grains and small bodies in the natural rock. The floors are frequently deep, and very rich; but the working is attended with considerable expense, from the quantity of large timber required for the support of the several passages of the mines. The same lode, that has been repercussive for several fathoms, is sometimes suddenly extended into a floor. Tin, in its diaphragmed state, is found either in a pulverised sandy layers, in separate flakes called flodes; or in a continued course of flodes, sometimes in such numbers as to extend to a considerable length, and from one to ten feet in depth. This course is called a floor; and when productive of a large quantity of metal, it obtains the name of benneyt, the Cornish word for living fires; and by the same figure, when the flode is but lightly impregnated with tin, it is said to be just alive; when it contains no metal, it is called dead; and the heaps of rubble are eminently styled dead. (See Tin.)

Ancient historians mention the tin of Cornwall, of the Isles of Scilly, and of Devon, as a branch of commerce between the Britons, and the Phœnicians, and Grecians, several centuries prior to the Christian era. The Phœnicians were the first who trafficked in this article; and Strabo reports, that they were so frequent in their endeavours to conceal from other nations the places whence they obtained it, that the muller of a Phœnician vessel, supposing himself pursued by Romans for the purport of discovery, ran upon a shoal, and suffered shipwreck, rather than permit the tract to be made known. During the Saxon dominion, the working of the mines was, through intelline commotions and the inroads of the Danes, entirely neglected. The Normans are said to have derived great emolument from working them; but this seems doubtful, as, in the reign of king John, their produce was so trifling, that the tin-farm amounted to only 100 marks. In the next reign it was greatly increased. Under Edward I. a charter was obtained, by the lords of the seven tythings first bored with tin, from Edmund, evil of Cornwall, with more "explicit grants of the privileges of keeping a court of judicature, holding places of actions, managing and deciding all litany causes, of holding parliaments at their discretion, and of receiving, as their own due and property, the toll-tin, or the fifteenth part of all tin raised." The encouragement for searching for tin seems to have been, at this period, first appointed, or at least more permanently regulated. For these privileges, the landholders obliged themselves to pay to the earls of Cornwall, for the time being, four fhillings for every hundred weight of white tin. This charter was confirmed 33 Edw. I., with the additional privilege of a coinage, and a general licence to dispose of the tin. These grants were confirmed and enlarged by parliament, in the reigns of Richard II. and Edw. IV. The original flannel towns of Cornwall were Launceston, Lostwithiel, Truro, and Helston. To these places the tinners were obliged to convey their metal every quarter of a year; but in the reign of Charles II., Penzance was added, to accommodate the western tinners. All tin ores are wrought into metal in the county, and then cast into blocks, weighing from two hundred and three quarters to three hundred and three quarters each. These are not saleable till assayed by the proper officers, and stamped with the Duchy seal. Since Henry VIII.'s time, these coinages, as they are termed, have been held at the regular quarter dates. The annual produce of the tin-mines is about 25,000 pounds, which, exclusive of duties, may be estimated to afford an income of 250,000l.; the average value of each block being near 10l. 1s.

The income of the duchy derived annually from this source is about 100,000l. From the great exportation to China and India, the trade has been very flourishing; but from the great depth of the mines, and the high price of materials, the spirit of adventure has been considerably depressed, and the busineses consequentlly injured. Cornwall affords copper ores in great abundance and variety. Native copper is sometimes found on the sides of fissures in thick films, deposited by the impregnated water proceeding from the lodes. Veins of copper are frequently discovered in cliffs laid bare by the sea; but the most encouraging symptom of a rich ore is an earthy ochreous flume, called stilpin, similar in colour and texture to the rut of iron. (See Copper.) The manner of cleansing and dressing the ore is partly the same as that employed for tin; but being generally raised in larger masses, it requires less washing. In the melting houses at Hale, the furnaces are all reverberators; and those used for the process of roasting will contain about three tons and half of ore, reduced to small pieces. Lead-mines are not numerous in this county, though the ore has been found in many parts, and generally incorporated with silver. The ores are of very different kinds; but that most frequently discovered is galena, or pure sulphur of lead, both crystallized and in masses. It is foliated, and of a blueish grey colour. (See Lead.) Gold, though frequently found here, has never been in sufficient quantity to warrant the engaging in any expensive operations to obtain it. Silver is reported to have been raised here in such quantity, in the reigns of Edw. I. and Edw. I., as to have enabled them, in a great measure, to defray the charges of the wars they were engaged in. The produce became
became afterwards so insconsiderable, that the mines were entirely neglected till the sixteenth century, when an unre- ceived effort was made, after which the farch was again discontinued. This county affords abundance of iron ore, but the distance of coal renders the expense of working greater than the value of the iron produced. The ore has been lately shipped in large quantities for Wales. Sulphuret of iron, or pyrites, called by the Cornish miners mundeis, from the teependant appearance of its surface and structure, abounds here in a great variety of form and combination. It is intermixed with most copper lodes, and, from the closer consistence of the copper ore, is easily separated, either by hammers, washing, or evaporation. The principal semi-metals of Cornwall are bifmuth, zinc, antimony, cobalt, arsenic, wolfram, menshanite, and molybdenum, or sulphuret of molybdenum. Bismuth, in the ore, is usually of bright silvery white, and its structure irregularly foliaceous. Lapis calaminaris, or calamine, is an ore of zinc, produced here in great abundance, and of a very superior quality. Antimony is found in several mines in the parish of Endickana: it runs in veins, mixed with a small quantity of copper and lead. Cobalt is found in various parts of the county, but the quantity is insconsiderable. Arsenic is generally combined with other ores, with which running diffusely it. Wolfram is met with in several places, particularly in the mine called Poldice. Menshanite was the name given, by the Rev. Mr. Penrose of this county, to a substance resembling gunpowder, lately discovered in large quantities in the vale of Menaihan. Molybdena, which is the only species of molybdenum yet found, is commonly in masses; but sometimes crystallized in hexagonal tables. Cornwall contains more parliamentary boroughs than any other county in the kingdom, and the number of its representatives is consequently greater: it returns no less than forty-four members; many of them from places very insconsiderable as to trade, wealth, or population. This pre- eminence is not of very ancient date: it appears to have arisen from the large hereditary revenue accruing from the duky to the crown, or to the immediate heir, the prince of Wales. In Edward I.'s reign, only the county, and the five boroughs of Liskeard, Looe, Helston, Bodmin, and Helston, had the privilege of representation. Loffth- worthall was added to the number, temp. Edw. II. No further addition was made till near the end of Edward V.'s reign, when this right was granted to Stitha, Camelford, Well Looe, Grampound, Bosfinny, St. Michael, and Newport. In the firit of Mary, Pembra was admitted into the list; and three years afterwards, St. Ives. At various pe- riods in the reign of Elizabeth, the same honour was ex- tended to Triggony, St. German's, St. Maw's, East Looe, Fowey, and Cullington; which increased the number of bo- roughs to twenty-one. Eight of these had either an im- mediate or a remote connection with the demeane lands of the duky; and four devolved to the crown, on the dissolution of the monasteries. The names of many of the ancient towns of Cornwall, its castles, rivers, mountains, manors, fiefs, and families, are derived from the Cornish tongue; whence most of the technical appellations in mining, logger- dry, and fishing, may also be traced; but the language it- self is no longer remembered. The last person known to speak it was an old woman, of whom some account was given by the Hon. Daines Barrington in 1768, and printed in the Archi-ologia, vol. iii. (See CORNISH.) The waste-lands may be estimated at nearly one-fifth part of the county; a considerable portion of these consists of marshy grounds, intermixed with rocks and mountains. The duchy-lands, which are far more extensive than those of any other proprietor, are mostly held on leases for lives, renewable for a fine certain, or calculated on their improved value: the income derived from them, and that from the duty on the cosmage of tin, are the only parts unalihened of the immense hereditary revenues, which for- merly constituted an independent provision for the heir-apparent to the crown. This fortune was originally bestowed by Edward III., in the eleventh year of his reign, on his eldest son, Edward the Black Prince, whom he created duke of Cornwall, by the "inventurc of a wreath, a ring, and a silver rod." By a special act then passed, the title and duky were limited to the first begotten son of the prince, and his heirs, being kings of England, for ever: and from that period the eldest son of the sovereign is presumed to be of full age on the very day of his birth, and immediately has the right to all the possessions connected with the duky. Some portions of the revenues have been, at different times, distributed in a manner unauthorized by the original grant, which expressly provides against any alienation: yet several have been divided of, by an act passed in the present reign. It appears also, from a recent debate in the house of com- mons, that, during the minority of the present prince of Wales, upwards of 300,000l. arising from the duky revenues, had been appropriated to the civil lift expenditure, and other public uses.

The principal rivers of Cornwall are the Tamar, the Lynher, the Looe, the Fawy, the Camel or Alan, the Fal, the Loe, the Hél, and the Foly. Cornwall is in the dioceses of Exeter, and in the western circuit. It contains about 780,500 acres, is divided into nine hundreds, and comprehends 201 parishes, and 23 market towns. In the return to parliament in 1831, the number of house was 34,378, of inhabitants 188,269. This county sends 640 men to the militia, and pays eight parts to the land-tax. The affizes are held alternately at Laun- ceton and Bodmin. Borlafe's Antiquities of Cornwall, fol. Pryce's Mineralogia Cornubienfis, fol. Beauties of Eng- land and Wales, vol. ii.

CORNWALL, a township of America, in Addison county, Vermont, E. of Bridport, on lake Champlain, containing 826 inhabitants.

CORNWALL, New, a township in Orange county, New York, of whose inhabitants 350 are electors.

CORNWALL, a township in Litchfield county, Con- necticut, about 9 miles N. of Litchfield, 11 S. of Salisbury, and about 40 W. by N. of Hartford city.—Also, a small town in Upper Canada, on the bank of Iroquois river, near lake St. Francis, between Kingston and Quebec, containing a small church, and about 30 or 40 houfes.

CORNWALL, one of the three counties into which the island of Jamaica is divided: the other two being Middlesex and Surry. Cornwall contains five parishes, three towns, and five villages. The towns are Savanna-La-Mar, on the S. side of the island, and Montego-bay and Falmouth on the north. An affize court for the county of Cornwall, is held every three months in Savanna, which begins the last Tuesday in March, June, September, and December; and each affize court is limited to a fortnight in duration. The number of effective men raised in this county in 1792, con- fited of 308 cavalry, and 2303 infantry.

CORNWALL, Cape, the name given by captain Cook to the S. W. point of the largest island on the N. W. side of the passage called Endeavour straits, near Poitifitan island, on the eastern coast of New Holland, or New South Wales, S. lat. 15° 43'. W. long. 219°.

CORNWALLIS, a town of America in King's coun- ty, in the province of New Brunswick, situated on the S. W. side
COROCONDOMA, a town of Asia, situated at the entrance of the Cimmerian Bosphorus, on the Euxine sea. There was an island of the same name; and near the town was a large channel formed by the waters of the Euxine sea.

COROCORO, in Ethnography, the name of a Brazilian fish, somewhat resembling the Coracins of the Mediterranean. It has a finus in the back; in which, at pleasure, it can bury the fins. Marggraves's Hift. Brazil.

CORODAMUM, in Ancient Geography, a promontory of Arabia Felix, on the eastern coast of the Persian gulf; now called Cape de Raffagata.

CORODIO babenda, a wret, whereby to exact a corody of an abbey or religious-house.

CORDY, Corody, or Corody, in Law, (corodium, from coroidea, also coroneum and corredum,) a sum of money, or allowance of meat, drink, and clothing, due to the king from an abbey, or other house of religion, whereof he is the founder, towards the reasonable subsistence of any fervant he thinkes fit to bewayl on it.

The difference between a corody and pension is laid to be, that a corody is allowed towards the maintenance of any of the king's fervants in an abbey; but a pension is given to one of the king's chaplains, for his better maintenance till he may be provided with a benefice. See Fitzherbert, Nat. Br. fol. 250. who sets down all the corodies and pensions certain, that abbeyes, when they flood, were bound to perform to the king.

Corody also denotes the right belonging to the king of finding one of his chaplains to be maintained by the bishop, or to have a pension allowed him till the bishop promotes him to a benefice. This is also in the nature of an acknowledgment to the king, as founder of the see, since he had formerly the same corody or pension from every abbey or priory of royal foundation. It is now fallen, as judge Blackstone apprehends, into total difuse; though sir Matthew Hale says, that it is aee of common right, and that no procreation will disfigure it.

Corody is also a right of suffenance, or of receiving certain allotments of victual and provision for one's maintenance. (Finch. L. 162.) In lieu of which, especially when due from ecclesiastical persons, a pension or sum of money is substituted. These corodies may be reckoned a species of incorporeal hereeditaments; though not chargeable on, or infusing from, any corporeal inheritance, but only charged on the person of the owner in respect of such of his inheritance.

COROLIA, in Ancient Geography, a town of Arabia Felix, which Pliny places on the coast of the Red Sea.

COROLLA, in Botany, (coronula, a little crown), vulgarly called the leaves of a flower. Bound of these more delicate and dilated, generally more coloured leaves, which when the calyx is present are internal with respect to that part, (see Calyx,) and always external with regard to the more essential parts, the immediate organs of impregnation, designated Stamina and Petalla. The Corolla constitutes the chief beauty of flowers, and is commonly the seat of their most splendid colours, as well as of their fragrance. Its forms are extremely diversified. It is either monopetalous, confining of one leaf or petal, or polypetalous, composed of several. In either case it is called regular when its general figure is uniform, as in a primrose or snowdrop; or irregular when otherwise, as in a fumitory or violet. A regular corolla is called equal when all its divisions are of the same size, as in a strawberry blossom, but the snowdrop has an unequal corolla. Under the name of Corollas two different parts are often comprised, the petal or petals, and the nectary; see Nectarium. The latter however is sometimes of a glandular nature, totally distinct from the corolla. A monopetalous corolla is moreover composed of two parts, the tube the tube, and limbus the limb; the ambiguous positions of a polypetalous one are expressed by the terms anguis the claw, and lamina the leafy expansion or border. The Corolla is simple in most flowers; compound in the great natural class Syngenesia, exemplified by the Daisy, Dandelion, and Sunflower, as well as in the Scabious and some others.

A monopetalous corolla may generally be referred to one or other of the following forms, which are necessary to be known, to for m a ch of the understanding of the fiyem of Tournfort, or Krfoim, now obfolute, but because the generic distinctions of plants are by all botanists founded more or less upon such differences. They are exemplified in our Plates of Botany, Tournfort's System, 1, 2 and 3.

Corolla campylantra, bll-hapced, as in Aroep. Pl. I. cl. 1. fig. 1.; and Campylantra, fig. 7.

Hypanthodoris, funnel-shaped, Nicotiana, cl. 2. fig. 2.

Hypanthodoris, funnel-shaped, Nicotiana, cl. 2. fig. 1.

Rota, wheel-shaped, Dorozy, Pl. II. cl. 2. fig. 4.

Ringens, ringent, irregular and gaping, called by the older botanists, before Linnaeus, latilata, as in Lirionia, Pl. II. cl. 4. fig. 2.

Peronoptera, peronate, irregular and closed by a fort of palate, as Antirrhimum, cl. 2. fig. 4.

A polypetalous corolla appears under the following shapes.

Cruciferae, cruciform, like Raphanus, Pl. III. cl. 5. fig. 1.

Lunaria, fig. 6.; as well as the common fock and Wall-flower.

Rofacea, rofaceous, like the rose, as also Popover, cl. 6. fig. 5.; and Nymphs, fig. 8.

Papilionaceae, papilionaceous, as in all the pea kind.

Incumbent, incommene, when some part or parts which analogy would lead us to expect, are wanting, as in Amorpha, Balfard Indigo, a papilionaceous flower in habit and appearance, but confining of only the large upper petal or standard. See Papilionaceous.

An irregular corolla varies occasionally to a regular one, even in the same species. Of this the common yellow Toadflax, Antirrhimum Linn. affords a celebrated example, on which Linnaeus has written a dissertation in the Amenae Academicae, v. 1. 55. t. 3, under the name of Peloria; nor is this by any means a solitary instance of such a transformation. See Peloria.

Linnaeus considered the corolla as originating in the inner or inner barks, but more correct ideas of the structure and phylogeny
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of plants render this hypothecs totally untenable.

CoRTE X.
The whoie

thicker, as well as of a green hue, affuming the ufual hab't
Daphrc, tiie
of the calyx of its natural ally Chciwpgdium,

Mezereon, however beautiful and fragrant, has but a coufe and phyfiology of this part have not yet
evinced by Cnid'ni, its near relation,
been generally explained or underftood. That it proteds loured calyx, which is
Perhaps by the lame rule the whole
befides.
are
liapetals
bearing
function
whofe
impregnation,
the tender organs of
though order of Liliaceous plants, the nobles of the vegetable kingble to be frultrated by wet, is evident in many cafes,
Linna us imagined that the action of the wind, dom, will be proved to have in general only a coloured calyx,
in all.
with which that part is adornon the thin expanded form of the petals, made them ferve as notwithstanding the fplendour
acquainted with a new gewings to wait the flower up and down in the air, and thus ed ; for we have lately become
with fix petals bclides
promoted the diffufion of the oollen over the organs it was nus, near Agapanthus, of this tribe,
Of this there can be no doubt, but its coloured calyx. See Introduction to Phyfiological and
dettined to impregnate.
by the Syjlcmatical Botany, p. 263. The cup or crown of the
fuch a pnrpofe ii by no means univerfally anfwertd
Narciffus thus becomes a true corolla, and the fix leavts
It muft be evident to an attentive oborgan in queftion.
con- which Surround it a calyx, the /pallia or Sheath bring, cerferver, that the probable ufe of the corolla is clofely
elteemcd a braclea.
This man.
nected with air and light, efpecially if we take into conii- tainly with no impropriety,
ner of understanding the flowers in qntltion will not howderation its cellular texture, and its vivid colours, for the
dtpcndai.ee upon ever accord with the hypothelis of Mr. SahlLmy, publifhed
latter are known to have a nod intimate
inin the eighth volume of the Linnaean Society's Tranfactions,
light; and even the corolla iifelf is manifeftly, in many
degree,
the chief purpofe of which is to (hew that the ltamina are
eminent
in
an
the
folar
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by
Stimulated
ilances,
never inftrted into the calyx, though often, as every body
folding itfelf up when they are even partially withdrawn.
The Crcpis rubra, Pink Hawkwecd, if gathered in bright knows, into the coiolla. It is much to be wiShed that fo
It
weather, doles its flowers when placed in a room ; but after commodious a distinction were to be depended upon.
the darknefs of night has paffed over them, thofe very may ferve, in fome inllances, but in others we apprehend it
For inflance, it is too paradoxical to call the
muft fail.
flowers will expand and remain open in a degree of light
not fufficient to keep expanded others that have more re- lower part of the tube in the beautiful fcarlet calyx of
It is to be preFuchfia, into which the petals and llamina are inferted, a
cently been expofed to the meridian fun.
fumed therefore that the corolla performs fome functions receptacle, any more than the analogous portion of the
with refpect to air and light, ferviceabie to the Stamens and flower in Colchicum or Agapanthus, which the new genus
abovementioned, allied to the latter, proves to be a cah x
Ptftils, analogous to what the leaves perform towards other
II this difficulty can be got
as much as that of Fuchfia.
part6 of a plant, but not exaitly conformable to them.
German author, named Sprcngcl, has written an ela- over, we Should be much fatisfied, for we do not propofe it
believe that no abfoborate work for the purpofe of demonltrating, in fome hun- from any love of contradiction.
dreds of inftanoes, how the corolla fcrves to attract infects, lute distinction ex'fts, in every cafe, between the calyx and
not onlv by its form and general beauty, but often by pe- corolla, and that the very fame part, externally green and
coarfe, may be fo far of the nature of a calyx, while its deliculiar fpots or murks, called by him macula indicantet, tervjng to point out the precife iituation of t lie honey of which cately coloured and poliShed inner Surface may be altogether
While they analogous to a diitinct corolla. Ot this Omithogaliim, and
thofe induftrious little animals are in fcarch.
It i3 proper
plunder the flower of its S-.veetneSs, the) in return tervc the Narthecium, Engl. Bot. t. 535, are inllances.
mod important purpofe, by promoting the accefs of the pol- to mention the rule propofed by Linnaeus for distinguishing
See the paits in queftion, that the Stamens are placed oppofite
len to the ftigma, and fo rendering the feeds fertile.
to the fegmentsof the calyx, and alternate with the parts of
Impregnation of Plants.
That the corolla has a more intimate connection with the the corolla. This accords, as Adanfon obferves, with the
Liliaceous family as above explained, though Linnasus did
vegetable impregnation, than even the above elegant theory
of Sprengel is fufficient to account for, appears from its not fo understand their parts, and we apprehend it will hold
good more generally than even its author believed. It can
different degrees of duration in double flowcis and in fingle
In fome of the latter it falls almoft as foon as the onlv ferve however when the Stamens are of the fame number
ones.
as the Segments or petals of the corolla or calyx.
petals are well expanded, efpecially in warm weather ; in
The corolla is iometimes deficient in certain fpeciea of a
double flowers, on the contrary, whofe organs of impregnation are obliterated, its vital principle is not fo foon ex- genus, though others of that genus arc furnifhed with it,
hausted, and it remains feveral days, juft as happens alfo to as in Sagina apetala, and the earlier flowers, occalionally, of
premature Angle bloflbms in the culd ot winter, that ripen Ranunculus auricomus, Engl. Bot. t. 624.
new-fimplcleaved fpecies of Ceratopetalum, Bot. of New Holland, t. 3,
no feed.
Whatever the ufe of the corolla may be. it is not an or- has alfo been difcovercd without petals. Hence we learn
gan effential to all plants. The cai\x, perhaps, or even the that the corolla is not only uneflcntial to a flower in general,
filaments of the Stamens, appear occasionally to anfwer its
but, in fome cafes, even to the definition of a genus or
Hence a difficulty arifes among fylttmatic bo- fpecies. S.
purpofes.
tanilis, when a flower has only one leafy covering, to deor Consectary, in Mathematics, is
In ufed for a confequence drawn from fome propofition already
termine whether it Should be called a corolla or calyx.
mod cafes analogy will enable us to decide thiB. The calyx advanced or demonstrated : as if from this theorem, " That
a triangle which has two equal fides, has alfo two equal
is ufually of a green colour, and thick coaife texture, like
the leaves, and all botauitls are nearly agreed in calling by angles," this confequence Should be drawn, " that a triangle, which hath the three fides equal, has alfo its three
that name any Angle covering which anfwers thisdefcription.
They even go further, and denominate calyx the beautiiully angles equal."
coloured leavts of fome flowers which agree in natural afCOROLLISTjE, among Botanical Authors. See BoThus Polygonum, or Knot-grafs, is tany.
finity with the former.
univerfally allowed to have a coloured calyx, and veiyjtilily,
among Botanijls, a term ufed to ex-

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COROLLARY,

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prefs thofe little partial flowers,

which together conltitute
phyfiology


the whole compound ones. They are of two kinds, the tu- 
bulated, and ligulated; the former are always furnished 
with a campanulated limb, divided into four or five segments: 
the latter, or ligulated corollae, have a flat linear limb, 
terminated by a single point, or by a broader extremity, di-
vided into three or five segments.

COROMANA, or CORMAN, in Ancient Geography, 
a town of Asia, situated on the Persian gulf, according to 
Steph. Byz. It is probably the same place which is called 
by others Coromans, and referred to the eastern coast of 
Arabia Felix.

COROMANDEL, Coast of, in Geography, the eastern 
coast of Hindoosland, along the Carnatic, extending from 
Point Calymere, in N. lat. 10° 20'. E. long. 79° 54' 30", to 
the mouth of the Kullnab river, in N. lat. 15° 45'. E. long. 
80° 10'. The geography of this coast is settled upon unex-
ceptionable authorities by major Rennell, who observes, that 
it has no port for large ships.

CORON, a Jewish liquor measure, suppos’d to be the 
name with the homer.

CORON, in Geography, a sea-port town of European 
Turkey, in the Morea, situated on a gulf of the same name, 
anciently called “the gulf of Melina,” with a large har-
bour. This place was taken from the Turks by the 
Venetians, in the year 1685, after a very obstinate siege, 
which lasted 49 days. In 1715, it was retaken by the Turks, 
with little loss. Eighty miles S.S.W. of Corinth. N. lat. 
37°. E. long. 21° 53’.

CORONA, in Anatomy, is that edge of the glans of the 
penis where the prepuvium begins.

CORONA, in Architecture, a broad flat member in a cor-
nice, which is placed below the cymatium, and above the 
mutules or modillions. Thus the mutules or modillions, 
when there are any, support the corona. (See Plate XIII. 
and XXIX. of Architecture.) The corona is called by the 
Italians guastabati and lagrimitati; by the French, larnier; 
and by our workmen, lern; all words of the same import, 
and taken from the circumference of the rain-water dropping 
from the corona, which thus shelters the members be-
neath.

The corona may be regarded as the most essential member 
of a cornice, as it is that part which answers the main pur-
pose of giving shelter and producing shade; and except in 
a very few antique examples, such as the arch of Lions at 
Verona and the temple of Ponce at Rome, where it is omit-
ted, there is nothing in architecture better supported by 
authority and theory.

CORONA AEGLE, or Septentrionalis, Northern Crown, or 
Garland, in Astrology, a constellation of the northern 
hemisphere; whose stars in Ptolemy’s Catalogue, in Tycho’s 
and in Hevelius’s, are 8; in the Britanic Catalogue, 21. 
See Constellation. See also Phili. Tranf. for 1797, p. 315. 324.

CORONA AURIFLIS, or Meridianis, Southern Crown, a 
constellation of the southern hemisphere, whose stars in 
Ptolemy’s Catalogue are 13; in the British Catalogue, 12.

CORONA, LEONARDO, in Biography, a historical painter 
of eminence, was born in 1561, at Murano, in the lato of 
Venice. After having received the featty precepts which 
his father, a miniature painter, could furnish, he repaired 
to Venice, where his talent was first evinced in the admirable 
copies which he made from the pictures of Titian. He was 
soon employed in many extensive works, and became not 
unfrequently a successful competitor of the younger Palma. 
Tintoretto, however, seems to have been his model; and 
indeed, in his large picture of the Crucification, the refem-
blance to his prototype is so strong, that his biographer, 
Ridolfi, has difficulty in defending him against the charge 
of plagiarism. Amongst his finest works may be enumerated 
a picture of the Annunciation, of striking effect, in the 
church of S. S. Gio. e Paolo; and an altar-piece, much in 
the style of Titian, in that of St. Stefano. This artist died 
in the year 1655, Ridolfi, Lanzi, Staor Pitt.

CORONA, in Botany, a Crown, is by some writers used 
for the wing or down of the seeds of compound flowers, 
called by Linnaeus pappus. It has been vaguely applied 
to the cup in the centre of a nectaris, by those who could 
affix no precise ideas to that part, and who would not adopt 
the Linnaean term nectarium. (See Corolla.) Wildenow 
has first defined Corona as an appendage to the nectarium, 
containing of one or more leaves, very various in form. In 
Narcissus it is, according to him, of one cup-like leaf; in 
some species of Silene, Lychnus, &c. of two or several appendages 
to the claw of each petal. The latter appears to us almost 
the only case in which the term is wanted, and it is one of 
those words belst used without any precise technical ap-
plication. S.

CORONA IMPERIALIS; Tourn. REGALIS; Dill. See Frill-
ELLARIA REGIA.

CORONA FOLI, lychnidii folio; Plum. See Bupenthal-
MUM FRUTESCENS.

CORONA FOLI, laurelci folio; Plum. See Bupenthal-
MUM ARBOSCENS.

CORONA FOLI, caroliniana; Mart. See Bupenthalum 
helianthoides.

CORONA MINOR 3; and MINOR FEMINA; Taber. See Hel-
LANTHUS INDICIUS ET MULTIFLORUS.

CORONA MINOR, DISCO ATRARENTIS; Dill. See HELIA-
NTHUS ATRARENTIS.

CORONA MARITIMA; Plum. See Silphium Tributatum.

CORONA CERCLIATI. See CROWN, and COIF.

CORONA AEUTHICA, in Natural History, the name of a 
feashell of the molium, or concha globosa kind.

CORONA IMPERIALIS, a name given by authors to a kind 
of voluta, differing from the other shells of that family, by 
having its head ornamented with a number of points, forming 
a fort of crown.

There are four species of this shell found in the cabinets 
of the curious.

CORONA FOLI AMERICANUS, the name of a marine insect. 
See American, &c.

CORONA TRIUMPHALIS, Lat. triumphant crown. Among 
the Romans, there were two triumphal crowns for the ge-
eral, who had gained a signal or important victory; the 
first was given by the army, and originally it was only a 
simple laurel, but was afterwards of gold, in imitation of the 
leaves of the laurel; the second was called corona provincialis, 
which was likewise originally of simple laurel, but after-
wards of gold, and very heavy. Plutarch informs us, that 
the person who triumphed received a great number of pro-
vincial crowns.

CORONA PROVINCIALIS. See the preceding article.

CORONA, Ital. a crown, a medall character for a paule; 
is a semicircle with a point under it, thus: o. it is often 
uglilly called in English a bull’s eye; see Crown and 
Pause. The paule used to be ad libitum; but in full pieces 
this was found inconvenient, as the whole band never re-
trun the ftrain at the fame instант. Emanuel Bach, and 
Haydn, we believe, were the first composers who acertaient 
its length by reits; making it onfit of two or three bars, 
specificd alks in all the several parts. The French term 
this kind of silence, point d’orgue. In rondeaux and fongs 
in which du capo occurs, it is the final mark or signal of ter-
mation.
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mination. It likewise indicates the final close in rounds and coven upon such notes in the several parts, as form a can- tron chord to the key notes.

CORONE, or HALO, in Optics, are luminous circles which are formed by light round the sun, the moon, and even round the stars, planets and the fixed stars. They are sometimes white, but at other times coloured: but for a full account of their different appearances, and for the various conjectures respecting the causes upon which they depend, see the article HALO.

CORONA Lucida, in Astronomy, a star of the first magnitude in Coelum Borealis. See Lucida, a-d Constellation.

CORONA Hint. See JUPITER, and Right of the Crown.

CORONAE, pl. coronae effus. See CUSTOS.

CORONA, in Ancient Geography, a town of Greece, in Phocias, a country of Thessaly, according to Strabo and Ptolemy. Also, a place in Greece, in the Peloponnesus, situated between Sicyon and Corinth. Also, a town situated in the northern part of the isle of Cyprus: it was episcopal; and called also Cyrenia and Cerena. Also, the name of a peninsula of Greece, placed by Steph. Byz. near Attica.

CORONAL SUTURE, in Anatomy, the future which joins the femi circular edge of the frontal bone to the anterior margin of the two parietal bones. See SKELETON.

CORONALS, in Botany, Hort. Cl. See AGRO-
STEMMA coronaria.

CORONARIA, the ninth natural order in the Systema Nature of Linnaeus, and the tenth in the Posthumous Pre-
lections. "A coronary flower," says Linnaeus, "implies a beautiful one, which is inserted in crowns or garlands." Nothing can be more evident than that this is an accidental circumstance, which cannot be strictly defined, and which, in no point of view, has a right to constitute a natural order. In the Systema Nature, the following six only are arranged under this order: ortischoglam, felis, hyaenuthus, alphodelus, anthericum, and poianthus. In the Prelections, the following are added, partly taken from the abolished orders, lilaceae and musiceae: albuca; tyanella; lunaria, Ait.; laschunia, Jacq.; phormium, Forl.; alatris; solon; yucca; agave; bromelia; hesperis, Swartz; tillandia; burmania; hypoxis; hersecaris; veratrum; melianthus; selinon, Thom.; helonias; fritillaria; escome, L. Herit.; leonis; tulipa. Those printed in Italics are inserted by Glicke. All the genera belong to the third class of Jellon, which consists of monocotyledonous plants, with perynous flamaes; and are distributed by him among his orders, jussia, lilia, bromelica, alphodeli, and macei. But Linnaeus has admitted into his coronaria only those plants which have no spatha, having formed his order spatunae expressly for the others. In some of the coronaria, he observes, the root is tuberos; in others, furnished either with a solid, or with a feely bulb. He connectis aloe, yucca. See, with bisum in this manner: the feely bulb of sulium is nothing more than the permanent bases of the leaves (Ice But); but in the aloe, and plants allied to it, not only the bale but the whole leaf is permanent, and is a kind of bulb, out of the earth, the scales of which are dilated and stilly. The flamentz are fix; the germ superior; and the capsule three-celled and three-valved.

CORONARY, in Anatomy, is a term applied to several parts of the body, and particularly to the blood-vessels which supply the heart.

CORONARY Arteries of the Heart, are two in number: an anterior and posterior, or right and left. See ARTERIES.

CORONARY Ligament of the Liver, is an adhesion of the posterior parts of this viscus to the tendinous center of the diaphragm. See LIVER.

CORONARY Arteries of the Lips, are two branches (a su-
perfior and inferior) of the external maxillary artery. See ARTERIES.

CORONARY Stomachic Artery, or arces coronaria ventri-
culz, is a branch of the caecial trunk, going to the stomach. See ARTERIES.

CORONARY Vein of the Heart, is the vessel which returns the blood from this viscus to the cavity of the right auricle. See VENA.

CORONARY Cade, in Ancient History, a kind of free gift, which, under the Roman empire, consistified of occasional offerries, that retained the name and semblance of popular content. It was an ancient custom that the allies of the re-
public, who ascribed their safety or deliverance to the suc-
cesses of the Roman arms; and even the cities of Italy, which admired the virtues of their victorious general, adorned the pomp of his triumph by their voluntary gifts of crowns of gold, which, after the ceremony, were consecrated in the temple of Jupiter, to remain a lasting monument of his glory to future ages. The progress of zeal and flattery soon multiplied the number, and increased the size of these popular donations; and the triumph of Cæsar was enriched with 2582 mally crowns, which might have amounted to 20,411 pounds of gold. This treasure was immediately melted down by the prudent dictator, who was satisfied that it would be more irrecusable to his soldiers than to the gods; his ex-
ample was imitated by his successors; and the custom was introduced, of exchanging those splendid ornaments for the more acceptable presents of the current gold coin of the empire. The Tarrassone Spain presented the emperor Clau-
dius with a crown of gold of seven, and Gaul with another of nine, hundred pounds weight. The spontaneous offering was at length exacted as the debt of duty; and instead of being confined to the occasion of a triumph, it was suppoe
ted to be granted by the several cities and provinces of the mon-
archy, as often as the emperor condescended to announce his accession, his consilship, the birth of a son, the creation of a Cæsar, a victory over the Barbarians, or any other real or imaginary event which graced the annals of his reign. The peculiar free gift of the senate of Rome was fixed by cusum at sixteen hundred pounds of gold, or about 6466 l. sterling. The opprized subjects celebrated their own felicity, that their favour should graciously confert to accept their feeble but voluntary testamony of their loyalty and gratitude. The senators were suppoed to be exempt from the "Aurum Coronarium," but the "Auri Oba-
tio," which was required at their hands, was precisely of the same nature.

CORONATION. See CROWN, KING, and OATH.

CORONATION of the Pope, a ceremony describer by P'En-
fant, in his "History of the Council of Conclave," in his account of the coronation of Martin V., created pope in a peculiar manner, agreed by that council, in the room of John XXIII., whom they had deposed. On this occasion there was erected in the court of the palace, a grand theatre, capable of containing 100 persons. "Close to the wall was a very high throne, above which there was a canopy of cloth of gold, the feet defined for his holiness. On the right hand, and on the left, were ranged several other seats, a little lower, but magnificent, for the princes and the prelates to sit on. At eight o'clock in the morning, the two pa-
triarchs, (for since the time of the crusades, they had got titulz Latin patriarchs in the eastern patriarchal fees sub-
duced
died by the Mahomets) the twenty-two cardinals, (for there were no more then present) the archbishops, the bishops, the mitred abbots, entered the court of the palace, on horse-back, in pontiftical habits. The emperor, and the other princes, followed on foot. When all the people were assembled, the pope mounted the theatre, preceded by the clergy, carrying the cross and waxen tapers. On the forepart of the theatre there was an excellent choir of music, which sang and played on all sorts of instruments. The pope had on his head a superb tiara, feeded with gold crowns, with a golden croz on the top. At his right hand, a little behind, were cardinal Viviers, and a patriarch; at his left, cardinal Brancas, with another patriarch. Then marched the other cardinals, and the grand master of Rhodes, who were all received by the emperor, the electors, and the princes. The pope being placed on the throne, the patriarch of Antioch took his tiara, or crown, off his head, and kneeled before him, holding his crown in his hand. Near him other cardinals kneeled also; one of whom carried some tow at the end of a thiek, another a croz, and the rest wax tapers. At the pope's right hand sat cardinal de Brancas, with eight other cardinals; at his left, the grand master of Rhodes, with eight cardinals. Next them, on the right, the emperor, on the left, the elector of Brandenburg, both attended by archbishops. Next them, electors, princes, bishops, and other prelates, as many as the place could contain. The rest sat on the rails, which had been made very wide for the purpose. There was, beside these, in the court, a great number of archbishops, bishops, and other great lords, both ecclesiastic and secular, who surrounded the theatre on horseback. There was, likewise, an immense crowd of people, who could not get into the court. When the music had ceased, one of the cardinals, who was kneeling before the pope, and who carried the tow, lighted it, and twice said aloud, addressing himself to the pope, "Sancte pater, fec transit gloria mundi." After which, three cardinals, who had been selected for putting the crown on the pope's head, standing up with the grand master of Rhodes, and taking the crown from the hands of the pope, they all four kneeled on the highest step of the throne, whence, after saying a prayer, they arose, and put the crown on the pope's head: after which, renewing their former places, they heard the Te Deum, and the masse. When the masse was ended, the pope mounted his white horse, which was preceded by three led horses, that were also white, and had red caparisons. The inferior clergy walked before, followed by the abbots, bishops, archbishops, and cardinals, on horseback. The emperor, on foot, held the reins of the pope's bridle on the right, walking in the dirt, (which is particularly observed by the historian) whilst the elector of Brandenburg did the same on the left. Thus the popz was carried in procession from the cathedral to the Augsburg monastery, and thence conducted to the episcopal palace. Here ended the ceremony.

CORONATELLE, in Lace, a writ at common law, which, after the death or discharge of any coroner, is directed to the sheriff, out of the chancery, to call together the freeholders of the county, for the choice of a new coroner, to certify into chancery both the election, and the name of the party elected, and to give him his oath, &c. F. N. B. 163.

CORONARE, coronândo, is a writ for the discharge of a coroner, for negligence or insufficiency in the execution of his duty; and where coroners are so far engaged in any other public business, that they cannot attend the office; or if they are disabled by old age, or disease, to execute it; or have not sufficient hands, &c. they may be discharged by this writ. See CORONER.

CORONE, CORON, in Ancient Geography, a town of the Peloponnesus, on the gulf of Melina, according to Pausanias; it was otherwise called Gepeta; but after the re-establishment of the Meletemes, Ein陳ich, the chief of a colony, which they had brought thither, called it Corone, after the name of his native town in Locensis. This town had many temples, among which were those of Divine, Bacchus, and Asculapius. Each deity had a marble statue. The public place was ornamented with a bronze statue of Jupiter Salvator. In the citadel was a Minerva, holding in her hand a crown. The harbour of this city was called the "port of the Achaeans." The territory of Corone extended as far as Colonis; and at the distance of 83 stadia from the city, on the sea coast, was a temple of Apollo, very ancient and the most celebrated of the country. Pultus says that from this city the gulf in which it was situated was called "Sinus Corunum." See CORON.

CORONE, in Ornithology, a species of Corvus, which fce.

CORONEA, Kepona, in Ancient Geography, a town which inhabited for a long time in Bocotia, as it is mentioned by Pindar, Cornutus Nepos, Dindoros, Strabo, and Panaitus. It was situated on an eminence, near mount Helicon, at some distance from the south of Chelone, and not far to the south-west of the temple of Minerva Itonia, in which the elates of Bocotia were accustomed to assemble. In the public place of this city was an altar of Mercury Epimenes, another consecrated to Venus, and at a small distance a temple of Juno, in which was a very ancient statue, executed by Pytebodorus of Thebes. This town was episcopal; but it is now only a village.

CORONEL, Paul, in Biography, a native of Spain, and distinguished by his great proficiency in the Oriental tongues. He was professor of theology at the university of Salamanca, and was employed by cardinal Ximenes in publishing his edition of the Polyglot Bible. He died A.D. 1534. Moreri.

CORONELLA, in Zoology, a species of caluber, the Coronellas Pybolis; which fce.

CORONELLI, Vincent, in Biography, a native of Venice, to which city in 1685 he was appointed cosmographer. He afterwards was public professor of geography. His works are numerous, and it is said he composed with so much facility that the writing of a folio was to him left labour than that of a pamphlet to another man. He began "An Universal Library," which he meant to extend to 40 volumes folio, but few only appeared. He published 400 maps with explanations, and in 1683 he completed two globes very nearly 12 feet in diameter, curiously ornamented with emblems, inscriptions, &c. which were placed in the royal library in Paris, and of which M. de la Hire published a description in the year 1704. Moreri.

CORONER, a very ancient officer at common law in this kingdom, so called, because he hath principally to do with the pleas of the crown; or such in which the king is more immediately concerned. In this view of the office the lord chief justice of the king's bench is the principal coroner in the kingdom, and may, if he pleases, execute the jurisdiction of a coroner in any part of the realm. (4 Rep. 57.) But there are particular coroners for every county of England; they are usually four, sometimes six, and sometimes fewer, in each county. (F. N. B. 163.)
CORONER.

This officer is of equal antiquity with the sheriff, and was ordained together with him to keep the peace when the seigneur gave up the wardship of the county. Mention is made of this officer as early as the time of King Athelstan, anno 927.

Indeed the office of the coroners in England is so ancient, that the commencement of it is lost in obscurity. "It seems (says Mr. Millar, in his "Historical View of the English Government,?) to have been an immemorial custom of the Anglo-Saxons, that several persons of distinction should be named by the freetholders in each county, with power to secure and imprison criminals of all sorts, to the end that they might be brought to a trial. From this employment, these officers, as in after-times the judges of the peace, found the mean of affixing a criminal jurisdiction, which gradually became more extensive. Another branch of business, devoted upon the coroner, and which may be regarded as an appendage or consequence of the former, was that of ascertaining and determining the value of the fines, amercements, and forfeitures, or of any other emolument, which occurred to the sovereign, either from the condemnation of public offenders, or from the right of the crown to all the goods, of which no other proprietor could be found. When the coroner had occasion to inquire into the truth of any fact, either with a view to determine those matters which fell under his own jurisdiction, or in order to transmit an account of it to some other criminal court, he proceeded, in the same manner that was customary in the courts of the hundred, and of the county, by the assistance of an inquest or jury; and the number of jurors, who, in those cases, were called from the neighbouring townships, was not less than was employed in other judicial investigations.

After the Norman conquest, when the aula regis drew to itself the cognizance of the greater part of crimes, it became the duty of the coroner to certify to that court his inquisition concerning those offences which fell under his jurisdiction; and upon this information, the most authentic that could well be procured, a trial before the grand jury was commenced. Upon the establishment of the king's bench, and of the commisions of oyer and terminer and gaol delivery, the like certification, and for the same purpose, was made by the coroner to these tribunals.

But in proportion to the advancement of the prerogative, the authority of the coroner, an officer elected by the county, was diminished; his jurisdiction was daily subjected to greater limitations; and his reports became gradually more narrow and defective; whether it be that, by having a fellow-feeling with the inhabitants, he endeavoured to screen them from justice, or that, from the ruin and relaxation to which every old institution is liable, his operations became tardy and inaccurate; certain it is, that he came to overlook the greater part of the offences which required the interference of the magistrates, and his inquisition was at length confined to a few of those enormous crimes, which excite universal indignation and reproof.

To supply the deficiency of the coroner's inquest, the sheriff, who had come, in a great measure, under the appointment of the crown, was directed, upon the meeting of judges in the circuits, or of the other criminal courts, to call a jury, in order to procure information concerning the crimes committed in particular districts. Hence the origin of what is called the grand jury, whose inquisition the judges were authorized to proceed in the trial of public offenders.

The employment of the coroner in Scotland, was the same as in England: and he appears to have used the same forms in the exercise of his jurisdiction. With the assistance of a jury, he is required to inquire into the commission of crimes; and either punish them by his own authority, or transmit information concerning them to the competent court. The negligence of this officer seems, in that country, to have likewise produced the interpolation of the sheriff, or chief magistrate of particular districts, by calling a jury for the same purpose.

The coroners are chosen by the freetholders of the county, by virtue of a writ out of chancery; and the choice is for life, unless they become sheriffs or veredors, or are discharged by the writ de coronore cumcurando, or by Stat. 25 Geo. II. cap. 23, for extortion, neglect, or misbehaviour.

This officer, by the statute of Wilmunster, (3 Edw. I. c. 10) ought to be a knight; and there is a writ in the register, in oblofible, called niff fitt miles, whereby it appears to be a sufficient cause for removal of a coroner chosen, if he were not a knight and had a hundred shillings per annum, freehold. This qualification, however, is now disregarded; and persons are chosen into this office merely for the sake of the fees annexed to it by 3 Hen. VII. cap. 1, and 25 Geo. II. cap. 29.

The coroner is to take the oaths of allegiance, supremacy, and abjuration, and then the oaths of office; and when he is elected and sworn into his office, he is to remember the qualification acts, and, in due time, to take the sacrament and oaths of abjuration. Impexy's Sheriff. By Stat. 25 Geo. II. c. 29, above cited, for every inquisition, not taken upon the view of a body dying in gaol, which shall be taken by any coroner in any township or place contributing to the rates directed by Stat. 12 Geo. II. c. 29, the sum of 20s. and for every mile which he shall travel from the place of his abode, the further sum of 9d. shall be paid him out of the money arising from the said rates; but for every inquisition taken upon the view of a body dying in gaol, so much money net exceeding 20s. shall be paid him as the justices at sessions shall think fit to allow, out of the money arising from the said rates. Provided that over and above the recoupment by the statute appointed, the coroner who shall take an inquisition upon the view of a body slain or murdered, shall have the fee of 13s. 4d. payable by Stat. 3 Hen. VII. c. 1, out of the goods of the slayer or murderer, or out of the amercements upon the township, if the slayer or murderer escape. Coroners taking farther fees are guilty of extortion. The Stat. 1 Hen. VIII. c. 7, enacts, that where a person is slain by misadventure, the coroner is to take no fee, on pain of 40s.

Their authority is judicial and ministerial; judicial, ascertained in great measure by Stat. Edw. I. de officio coronatorum, and confirming, first, in inquiring, when a person is slain, or dies suddenly, or in prison, concerning the manner of his death. And this must be "super fumum corporis;" (4 Inst. 271.) for if the body be not found, the coroner cannot sit. He must also sit at the very place where the death happened; and his inquiry is made by a jury from 4, 5, or 6 of the neighbouring towns, over whom he is to preside. If any be found guilty by this inquest of murder or other homicide, he is to commit them to prison for further trial, and he is also to inquire regarding their lands, goods, and chattels, which are forfeited thereby: but, whether it be homicide or not, he must inquire whether any demand has accrued to the king, or the lord of the franklins, by this death; and he must certify whether of this inquisition (under his own seal and the seals of the jurors) together with the evidence thereon, to the court of King's Bench, or the next assizes. Another branch of his office
is to inquire concerning those wrecks; and certify whether
wrecks or not, and who is in possession of the goods. Con-
cerning treasure-trove, he is also to inquire who were the
finders, and where it is; and whether any one be suspected
of having found and concealed a treasure: and that may be
well perceived (as an old statute of Edward I.) when one
liveth riotously, hunting taverns, and hath done for a
long time," whereupon he might be attached, and held to
have upon this fullness only. The ministerial office of
the coroner is only as the sheriff's subsitute. For when just
exception can be taken to the sheriff, for fullness of par-
tainty, (as that he is interested in the suit, or of kindness
tother plaintiff or defendant,) the process must then be
awarded to the coroner, instead of the sheriff, for the ex-
ecution of the king's writs. (4 Inf. 271.) In their former
capacity the act of one has the fame force as if they had
all joined; in the latter, their acts are void, unless they
join. 4 Inf. 271. 1 Ploowd. 73. And the authority of
coroners does not determine by the demne of the king; as
that of judges, &c. doth, who act by the king's commis-
ion, 2 Inf. 174.
If the coroner be remiss in coming to perform his office,
when he is sent for, &c. he shall be amerced by virtue of the
flature "De Coronatoribus." Coroners, concealing fe-
lours, &c. are to be fined and suffer one year's imprison-
ment. 3 Ed. 1. c. 9.
There are also certain special coroners within divers lib-
ties, as well as the ordinary officers in every county; and
some colleges and corporations are empowered by their char-
ters, to appoint the coroner within their own precincts.
(4 Inf. 271.) The bishop of Ely also hath power to make
coroners by a charter of Henry VII.; and there are cor-
ners of particular lords of manors and liberties, who, by
charter, have power to create their own coroners, or to be
 coroners themselves; especially the jurisdiction of the adm-
urity, as well as that of the verge. The coroner of Port-
mouth hath jurisdiction on board a man of war in Port-
mouth harbour: for though the admiral has a coroner of
his own, he never takes inquisition of felony: 4 Inf. 271.
Coroner of the king's household, hath exclusive juris-
diction within the verge, and the coroner of the county
cannot intermeddle within it; as the coroner of the king's
house may not intermeddle in the county, out of the verge.
(2 Hawk. P. C. c. 9. § 15.) If an inquisition be found
before the coroner of the county, and the coroner of the
verge, where the homicide was committed in the county,
and so it is entered and certified, it will be error. (4 Rep.
45.) But if a murder be committed within the verge, and
the king removes before any indictment be taken by the
 coroner of the king's household; the coroner of the county,
and the coroner of the king's house, shall enquire of the
fame: and according to Sir Edward Coke, the coroner of
the county might enquire thereof at the common law.
(2 Hawk. P. C. c. 9. § 15. 2. Inf. 352.) If the fame per-
son be coroner of the county, and also of the king's house,
an indictment of death taken before him as coroner, both of
the king's house, and of the county, is good. 4 Rep. 46.
Coroner of London, is eligible by the charter of King
Edward IV. by the mayor and commonality of the city, and
no other coroner has any power there. The lord mayor of
London is by charter, 18 Edw. IV., coroner of London:
Also the lord mayor, &c. may chuse two coroners in South-
wick. When any one is killed, or comes to an untimely
d eath in London, the coroner upon notice shall attend
where the body is, and forthwith cause the baedles of the
yard to summon a jury to make the necessary inquiry, how
such person came by his death; and after inquisition taken,
he shall give a certificate to the churchwarden, clerk, or
foxtun of the parish, to the intent the corpse may be buried:
the coroner's fee in this case formerly amounted to 25s.
but now to about double that sum; unless the friends of
the deceased are poor, and then he shall execute his office for
nothing. The coroners in London and Middlesex, and in
other cities, may call fellows and prifoners, according to for-
mer custom. Stat. 1. & 2. P. M. c. 15. § 6. 1 L. I.
Abr. 357.
Coroner, court of. See Court.
Coronet, in Farriery. See Coronet.
Coronel, in Geography, a town of Spain, in the pro-
vince of Andalusia; 30 miles S. of Seville.
Coronilla, in Botany, (a little crown, so called
from the flowers crowning the branches in a corymb.) Linn.
gen. 883. Schreb. 1198. Wildl. 1367. Geoff. 361. Vent. 3. 422. Claus and order, diadaphia decan-
Gen. Ch. Cal. one-leaved, very short, campanulate, five-
toothed; the two upper teeth near together, the three
lower smaller; permanent. Cor. papilionace; standard
somewhat egg-shaped, reflexed on all sides, scarcely longer
than the wings; wings egg-shaped, obtuse, connivent over
the top, denticent towards the bottom; keel compressed, ac-
minate, asceding, often shorter than the wings. Stam.
Filaments deciduous, nine and one, asceding, broader at
the top; anthers simple, small. Pipi. Germ superior, cyli-
drical; style bract-shaped, asceding; stigma small, obtuse.
Peri. Legume long, generally cylindrical, jointed, contracted
more or less between each joint, often separating at the
joints. Seeds one in each joint.
Eff. Calyx two lipped; upper lip with two con-
nate teeth, lower with three; standard scarcely longer than
the wings. Legume contracted between the seeds.
Linnæus has included in this genus the coronilla, fœcu-
daca, and emerus of Tournefort. Jussieu thinks that some
of the Linnæus species should be placed under the ornith-
opus, and that Tournefort's genera should be restored. Mr.
Sibbald in his Flora (Parad. Lond. 13.) is decidedly of opinion,
that they are very different. In coronilla, the legume is cylin-
drical and apparently jointed; and the seeds rather oblong.
In fœcunda, the legume is compressed, with one future flat,
the other narrow; the seeds tetragonous. In emerus,
the claws of the petals longer than the calyx; the legume
narrow and aw-shaped; the seeds cylindrical.
Wild. 9. Bot. Mag. 445. (Colutea fîlifóqua five fœco-
rides major; Baub. Pin. 397. Colutea fœcioides 1. elai-
oter; Chis. infil. 97. Emerus Cariplini; Tourne. 650. Dau-
harn. arb. 1. 215. tab. 90. Mill. Pl. 132. fig. 1.) & beta
Colutea fœcioides minor; Baub. Pin. 397. Colutea fœcioides
1. humilor; Chis. infil. 97. Emerus minor; Tourne. Pl.
132. fig. 2. Scorpan tenus of the English gardeners.
"Shrubby; peduncles about three-flowered; claws of the
petals three times longer than the calyx; limb angular." A
much branched, spreading, bulbous thur, from two to fix,
and in gardens eight or nine feet high. Stem not very
straight, sometimes so weak as to need support. Leaves
alternate; leaflets seven or nine, inclining to inerly heart-
shaped. green above, somewhat glaucous underneath, smooth.
Flowers entirely yellow, or tinged with orange-red, about
three together on common auxiliary peduncles; pedicels
shorter than the calyx; calyx broad, four-toothed; standard
very remote from the other petals. Legume slender, with
scarcey apparent joints. Seeds cylindrical. A native of
France
CORONILLA.

France and Germany; common in the English gardens, flowering in May and June, and sometimes again in autumn. Nearly trained on a wall or peling, it makes a beautiful ap- pearance of white, for which purpose it is well fitted by the shortness of its shoots. The leaves properly fermented are said to produce a dye, nearly equal to that of indigo. 2. C. juncea. Linn. Sp. Pl. 2. Mart. 2. Lam. 2. Willd. 10. (Polygala major maßiliottica; Bauh. Pin. 340.) Colutea caele gemina fugfoe; Bah. hift. t. p. 583. Dorrichium leu- tum; Barr. ic. 133.) "Shrubby; leaves quinate and ternate, linear-lanceolate, somewhat fleshy, obtuse." Stems about two feet high, erect; branches quite erect, slender, filiform, almost naked, or with very few leaves, green. Leaves small, in distant pairs; the lowest pair remote from the stem. Flowers yellow, six or seven together in small peduncled terminal umbels. Legume slender, jointed, lightly compressed, with small wings at the edges. A native of Spain and the South of France, flowering the greater part of the summer. 3. C. glauca. Linn. Sp. Pl. 4. Mart. 4. Lam. 2. Willd. 12; Bot. Mag. 13. (Colutea cornpundla maritima glauco folio; Bauh. Pin. 39.) Coronilla mari- tima; Tourn. Juff. 630.) "Shrubby; leaflets seven, very obtuse, mucronate; lower ones distant from the stem; flipo- laces lanceolate." Stems about three feet high; branches numerous, green or reddish, more or less bent at each joint. Leaflets ridge-shaped, sometimes inervertely heart-shaped, somewhat fleshy, with a small reflexed point, glaucous; stipules very small. Flowers yellow, ten or twelve in an umbel, on common peduncles longer than the leaves, remarkably fragrant in the day, almost scentless in the night. A native of the South coast of France. A con- stant ornament to our green houses, and almost perpetually in blossom. 4. C. valetina. Linn. Sp. Pl. 3. Mart. 3. Wild 11. Mill. Pl. 289. fig. 1. Bot. Mag. 185. Garr. tab. 155. fig. 3. (C. filiparum; Linn. 4. C. glipanica Mill. Mart. 13.) "Shrubby; leaflets nine or eleven, very glaucous, smooth; lower ones rather remote from the stem; upper stipules larger, roundish, mucronate." Stem a foot and half or two feet high, erect, smooth branches alternate, glaucous, zig-zag. Leaves alternate, shorter than the common peduncles; leaflets smaller than those of the preceding species, more truly glaucous, somewhat wedge-shaped, reticul. wth or without a small joint; stipules deciduous as the plant comes into flower. Flowers deep yellow, powerfully scented by day and by night. Legume long, erect; joints from three to seven, elliptical, turgidly lenticular, valveless. Seeds ovate-oblong, slightly compressed, of a red ferruginous color. A native of Spain and Italy. A hardy green-house plant, flowering in May, June, and July. 5. C. coronata. Linn. Sp. Pl. 5. Mart. 5. Lam. 5. Willd. 14; Jacq. Ann. 1. tab. 95. Lam. Ill. Pl. 625. fig. 4. Bot. Mag. 442. C. montana; Scop. Carn. 912. tab. 44. Colutea filipuca minor coronata; Bauh. Pin. 397. C. ferruginea alta; Can. Linn. 1. t. 68.) "Somewhat shrubby; leaflets nine, elliptical; lower ones almost close to the stem; stipule opposite the leaf, two-parted; legumes pendulous." A shrub about a foot and half high, woody at the bottom, but dying down to the ground every year. Stems erect, smooth, greenish, but little branched. Leaves alternate; leaflets smooth, glaucous; stipules small, embracing the stem, shrivel-ling, falling off very easily. Flowers yellow, with a greenish tinge at the end of the petals, especially of the keel; ped-uncles as long as or longer than the leaves, rising from the upper axis, and bearing about twenty flowers; claws of the petals a little longer than the sepals. Legumes with three or four joints, somewhat angular. A native of the South of Eu- rope. 6. C. viminulis. Salis. Par. Lond. 13. " Stem leafy angular; leaflets from seven to eleven, more or less inervertely egg-shaped, reticul. mucronate, glaucous; pedunc- les from six to ten-flowered; legumes very long, bowed upwards." Gathered near Mogador by Bruunfonnet, and raised in England from seeds sent to Mr. Salisbury by that botanist. Cuttings from it readily take root, and it ripens its seeds in our green-houses every year. 7. C. spinulata. Willd. 13. Cavan. 1. 43. tab. 153.) "Herbaceous; leaflets eleven, inervertely egg shaped, somewhat tomentous; stipules lanceolate; legumes becket with scaly scales, pen- dulous." A native of Spain. 8. C. mimica Sp. Pl. 7. Mart. 6. Lam. 6. Willd. 15. Jacq. Ann. 3. tab. 271. Tourn. 650. (Ferrum equinum, filhus in fumante; Bauh. Pin. 349. Polygalon Corti; J. Bauh. hift. t. 351. Linn. eee ney llos; Dalech. hift. 512.) "Somewhat shrubby, procumbent; leaflets nine, egg-shaped; stipule opposite the leaf, emarginate; legumes angular, knotty." B. C. five colutes mimica; Tourn. 650. Lob. 5. t. 87. (Polygala altera; Bauh. Pin. 344. Polygala valentina; Clus. 1. 68. Colutea, parva (species; J. Bauh. t. 38.) "The fame with more erect and more shrubby fets." Stems several, woody, two or three inches long, protrate; branches herbaceous, annual, pale-green, protrate and extending five or six inches. Leaflets very small, obtuse with a small point, of a fine glaucous colour; the two lower ones close to the stem; stipules very small, often deciduous. Flowers yellow, with a greenish tint at the ends of the petals, eight or ten together on a common peduncle, longer than the leaves. Legumes pendu- lous, finely angular, with three or four oval-oblong joints. A native of the South of Europe, on dry uncultivated hills. 9. C. pentaphyda. Willd. 16. Desfont. atl. 2. 170. "Shrubby; leaflets generally five, wedge-shaped, emarginate; flipo- laces egg-shaped." A very smooth shrub, two or three feet high, erect, much branched. Stipules large, deciduous. Flowers yellow, from ten to twenty in an umbel. A na- tive of hills about Algiers. 10. C. argentea. Linn. Sp. Pl. 6. Mart. 7. "Shrubby; leaflets eleven, silky; the outer one larger." La March thinks it very dubious what plant Lin- neus intended, and has referred to his Dialioris the synonynm from Alpinus, the only one quoted in the Species Plantarum. The Dialioris is, we think, beyond a doubt the C. valentina of Linneus and the Botanical Magazine. Mr. Miller has a C. argentea which seems to be distinct. It has figured it in Pl. 106, with the following description. A very hum- ble shrub, rarely more than two feet high, and in a dry bar- ren situation not more than one. Stem hard and woody, pro- ducing branches on every side near the ground. Leaves pro- duced at the joints; stipules two, car-shaped. Flowers yellow, very sweet-scented, on long slender axillary common peduncles. A native of the island of Creta, flowering in May, and ripening its seeds in August and September. It has a silky appearance only when it grows in a poor soil. C. cappadocia. Wildl. 18. (C. orientalis; Mill. Mart. 14. C. orientalis herbaeae, floris magis lutes; Tourn. cor. 44.) "Herbaceous; leaflets nine, inervertely heart-shaped; stipules roundish, wedge-shaped." Leaflets glaucous underneath; stipules smaller than those of C. valentina, reticul. permanent. Flowers yellow, numerous, on strong peduncles upwards of six inches in length. Legume short, thick, about an inch long. A native of Cappadocia. 12. C. Saginalis. Lam. 7. Willd. 19. (Polygala montana stricta, flore aureo; Barrel. ic. 73.) "Somewhat shrubby; very small; leaflets about eleven, inervertely egg-shaped; lower ones re- mote from the stem; stipules opposite to the leaves, solitary, emarginate, fleshy." Flowers yellow, from five to eight in a terminal umbel; claws of the petals longer than the cal- yx.
CORONILLA.

lyx. Observed by Vahl in Italy, and communicated to him by La Marck. 13. C. secunda. Linn. Sp. P1. 8. Mart. 8. Lam. 9. Wildl. 20. (Securidaca lustica major; Bauh. Pinn. 348. Tourn. Int. 590. S. vera; Clus. Hist. 2. 246. S. legitima; Gatt. tab. 153. fig. 3. Hedyarrum five S. major. Lab. inc. p. 76.) HatchetSub. "Herbaceous; leaflets numerous, oblóng, wege-shaped; legumes compressed, sword-shaped." Root annual. Stem about a foot long, procumbent, flattened, hollow. Leaflets fifteen or seventeen, green, smooth, oblong. Flowers yellow, from eight to twelve in an umbel; common peduncles axillary, filiform, liliput towards the base. Legumes near four inches long, compressed, a little bent like a fiddle, but shaped like a broad sword, terminated by the short stigma, pubescent in the middle, and a little swollen by the seeds, smooth at the sides with a broad margin, many-celled, two-valved; partitions membranous, very thin, permanent; the seed-bearing future deeply furrowed. Seeds about twelve, oblong, quadrangular, compressed, smooth, furriugoni-pil. It sleeps with the leaflets, converging above the petiole, and bent towards its base. A native of Spain, flowering in July. 14. C. varia. Linn. Sp. Pl. 9. Mart. 9. Lam. 8. Wildl. 21. Bot. Mag. 258. (C. herbacea, flore vario; Tourn. 659. Riv. tetr. tab. 94. Hedyarrum purpureum; Tabern. 516. Securidaca dentumor major; Bauh. Pinn. 349. 8. altera; Clus. 2. 237.) "Herbaceous; leaflets numerous, lanceolate, smooth; legumes cylindrical, erect." Root annual. Stem Lam. Wildl. perennial; Mill. Stem climbing, if supported, to the height of four or five feet, otherwise trailing on the ground. Leaves a little refining thome of faintness; leaflets from seventeen to twenty-one, rather obtuse; lower pair close to the stem; ripules small, lanceolate, spreading. Flowers about a umbel, either entirely purple, or even white, or with the standard purple and the wings white; common peduncles axillary, about the length of the leaves. Legumes slender, from two to three inches long. A native of Germany, France, and other parts of Europe. It has been recommended as a proper food for cattle, and cows are said to eat it readily. 15. C. globosa. Lam. 11. Wildl. 22. (C.cretica herbacea, flore magnio, candido; Tourn. Cor. 44. Hedyarrum argenteum; Alp. exot. 314.) "Herbaceous; leaflets numerous, elliptical; umbels globular; legumes cylindrical, pendulous." Stems filiform, smooth, branched. Leaflets eleven or thirteen, oblong, smooth, larger than those of the preceding species; ripules small, egg-shaped, acute. Flowers white, large, from twenty to thirty in a dense umbel, on common axillary peduncles. Legumes slender, smooth. A native of Crete. 16. C. cretica. Linn. Sp. Pl. 10. Mart. 10. Wildl. 24. Jacq. Hort. tab. 25. (C. cretica flore parvo purpuraceae; Tourn. Cor. 44.) "Herbaceous; leaflets fifteen, wedge-shaped, retuse; legumes about five together, cylindrical, erect." Root annual. Stems ascending, slender, angular, about a foot long. Leaflets smooth, the terminal one not larger than the others; ripules small, linear or lanceolate, spreading. Flowers purple, small; common peduncles axillary, hilipid towards the base. Legumes slender, cylindrical, slightly jointed, a little curved, especially towards the summit. A native of Crete. 17. C. parvitarda. Wildl. 24. (C. cretica, flore luto parvo; Tourn. Cor. 44.) "Herbaceous; leaflets nine, wedge-shaped, emarginate; legumes about five together, cylindrical, bowed; stem hilipid." Root perennial. Stem six inches high, much branched, covered with small, rigid, reflexed, scattered hairs. Leaves smooth; ripules very small. Flowers yellow, small. Legumes filiform, spreading. A native of Crete. 18. C. sce- dentis. Linn. Sp. Pl. 11. Mart. 11. Lam. 12. Wildl. 25. Plum. MSS. Burm. Amer. 98. tab. 107. fig. 5. "Stem climbing, flaccid." Stem fliver, hairy, twining about neighbouring plants, and rising to the height of eight or ten feet. Leaves alternate; leaflets five, an inch long, elliptical, tender; ripules in pairs, acute. Flowers pale yellow, large; peduncles axillary, in pairs, one-flowered, beft in all their length with small acute bracteae. Legumes more than three inches long, taper, erect, clothed with a short, soft, white down. A native of Giann. Curtagena, and Martinico. 19. C. cochinchenis. Matt. 12. Lour. Cochin c. 452. "Somewhat shrubby; leaflets about fifteen; peduncles with three flowered; legumes erect, clothed with the seeds." Stem four feet high, erect, branched. Leaflets oblong, obtuse, with a slender point. Flowers yellow, axillary. Legumes filiform. Seeds nearly cylindrical. A native of Cochinchina.

To these more generally acknowledged species of coronilla, which, with one or two exceptions, have their flowers in simple umbels, Willdenow has a separate section of plants with flowers in racemes, chiefly taken from the echnyon- mene of Linneus and other authors. As none of these are particularly described, and some not mentioned in our article ECHYNYMONENE, we shall subjoin them here.

20. C. grandiflora. Wildl. 1. (Echynonome). Linn. Sp. Pl. Seliim affinis; Breyd. prod. 1. 47. Comm. mal. 744. Galega affinis malabaria; Rai Hist. 1734. Turia; Rumph. amb. 1. 188. tab. 76. Agaty; Rheed. mal. 1. 95. tab. 51. Dolichos arborious; Forfic. defe. 134.) "Racemes about three-flowered; leaflets oblong, emarginate, smooth; legumes filiform, erect, compressed; stem arborious." From ten to fifteen feet high. Trunk erect; branches somewhat spreading, cylindrical, pubescent. Leaves a foot long, alternate; petioles thicker, at the base smooth; leaflets very smooth, very on short petiolar. Flowers very large, the size of a hen's egg, white, penonious, peduncles axillary, short, bifid or tritif; pedicel one-flowered. Legumes two feet long, linear, compressed. A native of the East Indies. 21. C. cucinera. Wildl. 2. (Echynonome; Linn. jun. Supp. 350. Forfic. Prod. 273. Toerleri-mena; Rumph. Amb. 1. 190. tab. 77.) "Racemes about three-flowered; leaves oblong, emarginate, pulvinertent; legumes somewhat bowed, filiform, a little compressed; stem arborious." A smaller and lower tree than the preceding. Leaves about a foot long; leaflets very numerous. Flowers large, red, mixed with purple. Legumes a foot and half long. A native of the East Indies, and of the islands Otaheite and Hu- shine, in the South Seas. 22. C. cyclanthoides. Wildl. 3. (Emerus; Plum. Spec. 19. inc. 123. fig. 1.) "Racemes few-flowered; leaflets elliptical; legumes cylindrical, filiform; stem herbaceous." 23. C. flaccida. Wildl. 4. (Echynonome; Linn. Sp. Pl. Seliab; Alpin. 291. sec. 2. tab. 82. Galega cegyptica, filius arcti; Balam. Pinn. 352. Dolichos; Forfic. defe. 134.) "Racemes many-flowered; leaflets linear, obtuse, mucronate; racis smooth and even; legumes filiform, cylindrical; stem herbaceous." Root annual. 24. C. cannabina. Wildl. 5. (Echynonome; Retz. ofb. 2. p. 26.) "Peduncles solitary or ia pairs, one-flowered; leaflets linear, obtuse, mucronate; racis smooth and even; legumes compressed, tetragonous." Root annual. A native of the East Indies. 25. C. pilosa. Wildl. 7. (Echynonome; Cavan.
C. avicula. "Flavum yellow; standard with black spots on the outside. A native of New Spain. 27. C. virgata. Wild. 8. (A) (Eichhony Mone; Cav. i. 2. 37. 293.) "Racemes many-flowered; leaves elliptical; legumes linear, sword-shaped, compressed, tetrazonous; stem herbaceous." 

C. zeylanica, flor albo et flore purpurasc. Burn. See Galega villosa 3 and G. purpurea.

Coronilla, in Gardening, comprises plants of the evergreen and deciduous shrubby kinds. Of which there are several species in cultivation, as the leafy-leaved coronilla (C. juncosa); the small shrubby coronilla (C. vultentina); silvery-leaved coronilla (C. argentea); great shrubby coronilla (C. glauca); and the scorpion fena (C. cernus). See the preceding article.

Method of Culture.—From the four first sorts, and particularly the second, being rather tender, though they are capable of succeeding in the open air, in mild winters, they should in common be potted, to be moved to the shelter of a green house, or glass frame, or some sheltered situation in the full ground. The two last are hardy and elegant flowering shrubs, for the clumps and other parts of extensive pleasure and other ornamented grounds. It is easy to raise the four first sorts by seeds, which should be sown in the spring, either on a warm border, or in a flender hot-bed, but the latter is the better mode, as it produces them more forward in pots of rich earth, half an inch in depth, than in a hot-bed when necessary. After the plants are two or three inches in height, they should be pricked out in separate small pots, giving shade, water, and air, hardening them gradually to the full air, about the middle of summer, in which they may remain till autum, then removing them to the shelter of a frame during winter, covering them only in time of frost or very fierce weather in the winter.

With respect to the last sort, the scorpion fena, it may be raised plentifully both by seeds, layers, and cuttings; the seeds should be sown in March, in a bed of light earth, and covered half an inch deep, giving occasional waterings in dry weather. When the plants have had one or two years growth, they must be removed into nursery rows, and in two or three more, they will be large enough for planting in the shrubbery, or other places. The layers of the young shoots may be laid down in autumn, or winter, giving them a gentle twist before they are put down. When they are perfectly rooted, they should be taken off, and planted in the above manner. The cuttings of the young shoots may be planted in the spring or autumn, in fludry borders, giving them water the following spring and summer. When well rooted, they should be removed, as in the above method.

The first sort have a fine effect in the green house, and the last in the shrubbery borders.


Eff. Ch. Siulee wrinkled, valvele.

Cor. Sp. 1. C. ruellii. Gard. 142. 21. Smith Eng. Bot. 1610. (Cochlearia coronopus. Linn. Nafurium furmis, capulis verrucosis; Rai. Syn. 391.) "Siliciles undivided, crested with sharp points; style prominent; corbys with few flowers." Root annual. Stems quite prostrate, depressed, branched, leafy, smooth. Leaves alternate, smooth, somewhat glaucous, pinnatisp; segments often half pinnatisp or peltate on their fore-side. Corbys opposite to the leaves, sefille, short, elongated into racemes as the fruit advances. Flowers small, white. Siliciles transferedly ragged, their plasts extended into little marginal teeth, which form a sort of crest, not emarginate, but terminated by the short pyramidal style, 

1. CORONTA, COROSAIM, the village in the Decapolis, situated on the banks of the sea of Galilee, N. of this sea, and near Bethsaida. It is placed by Eusebius about two miles from Capernaum.

2. CORPACHI, in Geography, a small village in Argyllshire, in Scotland, is about 2 miles nearly north from Fort-William, situate on the eastern shore of Loch Eil. This place cannot fail of obtaining celebrity in future, on account of the great works which are now carrying on for the western entrance-bason and locks of the great Inverness and Fort-William, or Caledonian, canal, intended to form a communication for large ships between the Eat and West fees, and avoid the large and often dangerous paffage round the north of Scotland. The laborious operation of excavating, or rather heaving and blasing the hard rock, in which the locks at this place are to be built, was begun in July 1824; and, in December of the same year, the formation of two immense banks of earth, (nealy similar to those we have mentioned as confructing at the western entrance at Clachnacary) was begun to extend into Eil Loch, for surrouding and protecting the sea or entrance lock,
lock, which is to be formed where the surface of the rocky stratum of this district is 20 feet under the line of high water of ordinary sea-tides, but where the rock shelves off, so that no cutting will be required at the tail of the rock, from whence the depth of water in the lock gradually deepens through 4, 5, 6, 7, 8, and 13 to 16 fathoms, at the distance of about three quarters of a mile. There is a projecting head of rock in this place, which will form the body of a pier to protect the tide-lock. The rife of these locks, which are to be constructed behind Corpach house, will be of the bottom of the canal upon the top of the stratum of rock; into which the lock, connecting with the first or sea-lock, will be cut 11 feet 9 inches, and the third lock will be cut 4 feet into the rock. For the space of a mile and quarter from these locks eastward, the cutting of the canal is level on Corpach Mofs, in strong compact sandy gravel, under about two feet of peat-moors. According to the report of Messrs. T. Telford and W. Jelford, the principal engineers in this important concern, which was ordered to be printed by the house of commons on the 24th June 1806, it appears, that an engine-house had been built, and one of Boulton and Watt’s 20 horse steam-engines fitted up, for pumping the water from the foundations of the first and second locks at Corpach; where the side-walls of the third lock from the entrance of the canal had been built, to the height of 12 feet above the bottom, which is rock, requiring no inverted arch upon it; the fore-bay was completed, and also the tail-bay, forming here, also, the fore-bay of the second lock; for these ingenious engineers have adopted the plan of placing the locks on the great canal in groups, and making the head-gates of one lock act as the tail-gates of the reef, as they do at Runcorn, on the duke of Bridgewater’s canal. The mortar used in these works, is from the lime-stone of Linmore island, at the mouth of the bay of Lochyol in Argyleshire, and is found to be an excellent water cement, after being exposed to the tide during a winter. The bank which is to incline the north side of the sea-lock, had been carried forwards from high water mark, a hundred and forty yards into the lock, and two rail-ways of eight hundred, and five hundred yards long, respectively, had been laid for conveying gravel to this sea-lock, and to the second and third locks, as well as rough quarry flonces, for facing the outside of the bank, as it proceeds, and defending it from the forf of the lock. The timbers and piles have been prepared for forming a coffer dam at the extremity and within this bank, for putting in the foundations of the face-locks.

The first aqueduct at this end of the canal at Dunknavie, is finished, consisting of two arches, 9 feet wide, 10 feet high, and 252 feet long, this being the width of the canal and its banks in this place, constructed of flone quarried near the spot. The locks at Corpach are building with flone of good quality, quarried at Fallefern, about 21 miles north of that place, on the easterne bank of Loch Eil. The second aqueduct at this end of the canal, over the long river at Strone, was commencing, consisting of a centre arch of 25 feet diameter, and two side-arches 10 feet wide each; those last being paved with flones on edge, are intended as road-arches for communication between the different sides of the canal, except perhaps during the height of the largest floods in this river. Great part of the cutting and banking for the canal between Corpach and Loch Lompy, was in hand or finished, but the grand chain of eight locks between Corpach Mofs and Duanvie was not begun, or intended so to be, until the sea-lock and the other two locks at Corpach are completed, so as to admit the flone vessels to proceed thus far up the line, to discharge their cargoes for building these tremendous locks. See Canal.

CORPEAU, a town of France, in the department of the Cote d’Or, and district of Beaune; 7 miles S. of Beaune.

CORPICENSII, in Ancient Geography, a people of the island of Sardinia.

CORFILICA, a country and government of Thrace, on the site of Macedonia.

CORFIELI, a people of Thrace, according to Pliny, Hardouin affigns them the towns of Perinthus, Ganos, and Samos.

COPPOON’S BAY, a bay on the N. W. coast of the island of St. Christopher; two miles S. W. of Deep town.

CORPORA cavernosa penis et eleridis, in Anatomy. See Cavernosa corpora.

CORPORA olivaria, two flight eminences in the commencement of the medulla spinalis. See Brain.

CORPORA pyramidatula, two small projections situated close to the former ones.

CORPORA quadrirugina, a square portion of medullary substance, situated behind and below the thalamus nervorum opticorum, and divided in its surface into four eminences, which are also called the nates and teltes. See Brain.

CORPORA striata, the grey pyrumon forms which occupy the anterior and outer part of the lateral ventricles of the brain. See Brain.

CORPORA fabriana, or mamillaria, or candida; two small hemispherical medullary bodies in the basis of the brain, behind the infundibulum. See Brain.

CORPORA Habens, in Law. See Habes.

CORPORA, in Mmilitary Language, a rank and file man, with superior pay to that of common soldiers, and with nominal rank as a sergeant. He has charge of one of the squads of the company, places and relieves sentinel, and keeps good order in the guard to which he belongs. He receives the word of the inferior round, that pass by his guard. Every company has three or four corporals.

The word comes from the Italian corporale, which signifies the fame thing; and that from corporalis, corps; the corporal being the first of the company.

CORPORA Lances, a person who acts as corporal, but receives pay only as a private.

CORPORA of a ship, is an officer who hath the charge of letting the watch and countrie, and relieving them; and who sees that all the soldiers and sailors keep their arms neat and clean: he also teaches them how to use their arms, and hath a mate under him.

CORPORA oath. See Oath.

CORPORA, Corporal, is also an ancient church term, signifying the sacred linen spread under the chalice in the cucharit and mafs, to receive the fragments of the bread, in any chance to fall. Some say it was pope Eufebius who first enjoined the use of the corporal; others ascribe it to St. Silvester. It was the custom to carry corporals, with some solemnity, to fires, and to have them against the flames, in order to extinguish them. Philip de Cumines says, the pope made Louis XI. a present of the corporale, whereon nay, lord St. Peter hung mafs.

CORPORATE county. See County corporate.

CORPORATION, a body politic, or incorporate; so called, because the several members thereof are formed into one body; and are qualified to take, purchase, grant, have a common seal, sue and be sued, &c. in their joint capacity.

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OF these corporations a great variety is subsisting, for the advancement of religion, of learning, and of commerce; in order to preserve entire and for ever those rights and immunities, which, if granted only to the individuals composing the body corporated, would upon their death be utterly lost and extinct. In proof of the advantage of these incorporations, Judge Blackstone adduces the case of a college in either of our universities, founded ad fluctuum et orandum, for the encouragement and support of religion and learning. As a mere voluntary assembly, the members that compose it might read, pray, study, and perform scholastic exercises together, so long as they would agree to do so; but they could neither frame, nor receive any laws or rules for their conduct; none at all, which would have any binding force, for want of a coercive power to create a sufficient obligation. Neither could they be capable of retaining any privileges or immunities; for, if such privileges be attached, which of this whole unconnected assembly has the right, or ability, to defend them? and, when they are diversified by death or otherwise, how shall they transfer these advantages to another set of students, equally unconnected as themselves? So also, with regard to holding estates or other property, if land be granted for the purposes of religion or learning to twenty individuals not incorporated, there is no legal way of continuing the property to any other than the heirs of the same purposes; but by edicts conveyances from one to the other, as often as the hands are changed. But when they are consolidated into a corporation, they and their successors are considered as one person in law; as one person, they have one will, which is collected from the fonic of the majority of the individuals; this one will may establish rules and orders for the regulation of the whole, which are a fort of municipal laws of this little republic; or rules and statutes may be preferred to it at its creation, which are then in the place of natural laws:—the privileges and immunities, the estates and possessions of the corporation, when once vested in them, will be for ever vested, without any new conveyance to new successors; for all the individual members that have existed from the foundation to the present time, or that shall hereafter exist, are but one person in law, a person that never dies.

The political constitutions were first invented and introduced, according to Plutarch, among the Romans by Numa, in order to break the force of the two rival factions of Sabines and Romans; by instituting separate societies of every manual trade and profession.

They were afterwards much considered by the civil law, in which they were called universitates, as forming one whole out of many individuals, or collegia, from being gathered together; they were adopted also by the canon law, for the maintenance of ecclesiastical discipline; and from them our spiritual corporations are derived. For the rise and gradual advancement of corporations or communities, and their favourable influence with regard to the introduction of regular government, police, and arts, and the diffusion of them through Europe, together with the invaluable advantages of personal security and general liberty; see City and Charters of Community. These communities, which by augmenting the wealth and importance, and concentrating the powers of individuals, were eminently useful in checking the oppression of the feudal government, and extending personal and political liberty, became, however, in process of time injurious, by their exclusive privileges and restraining laws, to the freedom and liberty of individuals, and to the general interests of commerce. In order to erect a corporation, no other authority in ancient times was requisite in many parts of Europe, but that of the town corporates, in which it was established. In England, indeed, a charter from the king was likewise necessary. But this prerogative of the crown seems to have been reserved rather for extorting money from the subject, than for the defence of the common liberty against oppressive monopolies. Upon paying a fine to the king, the charter seems generally to have been readily granted; and when any particular class of artificers or traders thought proper to act as a corporation without a charter, such "adulterine guilds," as they were called, were not always disfranchised upon that account; but obliged to pay an annual fine to the king for permission to exercise their usurped privileges. The immediate infliction of all corporations, and of the bye-laws which they might think proper to enact for their own government, belonged to the town corporation in which they were established; and whatever discipline was exercised over them, proceeded commonly, not from the king, but from that greater incorporation of which these subordinate ones were only parts or members. The government of towns corporation was altogether in the hands of traders and artificers; and it was the manifest interest of every particular class of them to prevent the market from being over-supplied, as exceedingly expressive of it, with their own particular species of industry; which is, in reality, to keep it under-fecked. Each class was eager to establish regulations for this purpose, and, provided it was allowed to do so, was willing to content that every other class should do the same. In consequence of such regulations, indeed, each class was obliged to buy the goods they had occasion for from every other within the town, somewhat dearer than they otherwise might have done. But in compunction, they were enabled to sell their own just as much cheaper; and in the dealings of the different classes within the town with one another, none of them were losers by these regulations. But in their dealings with the country they were all great gainers; and in these latter dealings confine the whole trade which supports and enriches every town; because every town draws its whole subsistence, and all the materials of its industry, from the country. Dr. Smith, in his "Nature and Causes of the Wealth of Nations" has shown in what way corporations check the operations of competition; and how their internal regulations serve to produce effect as combinations against the public, and as injuries even to the members of these corporations. Corporation laws, he says, obstruct the free circulation of labour, from one employment to another; and this effect they produce in a greater degree than they obstruct the circulation of stock from one place to another for this obvious reason; because it is every where much more easy for a wealthy merchant to obtain the privilege of trading in a town corporate than for a poor artificer to obtain that of working in it. The obstruction which corporation laws give to the free circulation of labour is common to every part of Europe; but that which is given to it by the poor laws is, as far as Dr. Smith knows, peculiar to England. It confounds in the difficulty which a poor man finds in obtaining a settlement, or even being allowed to exercise his industry in any parish but in that to which he belongs. It is the labour of artificers and manufacturers only of which the free circulation is obstructed by corporation laws. The difficulty of obtaining settlements obstructs even that of common labour. After illustrating and comparing the condition of soldiers and seamen with that of manufacturers, and observing that the former are at liberty to exercise any trade within any town or place of Great Britain or Ireland, Dr. Smith adds, "Let the same natural liberty of exercising what species of industry they please, be restored to all his majesty's subjects, in the same manner as to soldiers and seamen;
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fers; that is, break down the exclusive privileges of corporations, and repeal the statute of apprenticeship, both of which are real encroachments upon natural liberty, and add to these the repeal of the law of settlements, so that a poor workman, when thrown out of employment either in one trade or in one place, may seek for it in another trade or in another place, without the fear either of a prosecution or of a removal, and neither the public nor the individuals will suffer much more from the occasional disbanding of some particular classes of manufacturers than from that of folders."

It is beside our purpose to detail the history of particular corporations; and to trace, either to their causes or their consequences, the irregularities that have arisen from the establishment of restraining, exclusive and oppressive laws; and from the assumption and exercise of improper powers, on the part of those with whom the conduct and superintendence of these have been intrusted. Without detending into this minute detail, and pointing out errors and abuses of a local nature that require to be corrected in particular instances, we shall proceed with our account of corporations in general.

Of corporations, some are aggregate and others sole. The former consist of many persons united together into one society, and are kept up by a continual inceccion of members, so as to continue for ever; such are the mayor and commonalty of a city, the head and fellows of a college, the dean and chapter of a cathedral church. The latter consist of one person only and his successors, in some particular station, who are incorporated by law, in order to give them some legal capacities and advantages, particularly that of perpetuity, which they could not have had in their natural persons. In this sense the king is a sole corporation; so is a bishop; so are some deans, and prebendaries, distinct from their several chapters; and so is every parson and vicar. (See Parson.) Again, corporations, both sole and aggregate, are divided into ecclesiastical and lay. Ecclesiastical corporations are formed of members, who are altogether spiritual persons; such as bishops, certain deans, and prebendaries; all archdeacons, parsons, and vicars; deans and chapters, at present, and formerly prior and convent, abbot and monk, and the like, bodies aggregate. These were created for the furtherance of religion, and for perpetuating the rights of the church. Lay corporations are either civil or eleemosynary. The civil are established for a variety of temporal purposes. Thus the king is made a corporation to prevent in general the possibility of an interregnum or vacancy of the throne, and to preserve entire the possessions of the crown. Other lay corporations are created for the good government of a town, or particular district,—as a mayor and commonalty, bailiff and burgesses, &c.—for me the advancement and regulation of manufactures and commerce; as the trading companies of London; and of other towns;—and some for the more effectual accomplishment of various special purposes; as churchwardens, for preservation of the goods of the parish; the college of physicians and that of surgeons in London, for the improvement of the medical science; the royal society for the advancement of natural knowledge; and the society of antiquaries for promoting the study of antiquities. To this class judges. Bishop of Rochester is inclined to refer the universities of Oxford and Cambridge, (See University.) The eleemosynary corporations are such as are constituted for the perpetual distribution of the free alms, or bounty, of the founder of them to purpotes agreeable to his direction. Of this kind are all hospitals for the maintenance of the poor, sick, and impotent; and all colleges, both in our universities, and out of them, such as at Manchester, Eton, Winchester, &c., which colleges are founded for the promotion of petty and learning by proper regulations and ordinances, and for affording assistance to the members of these bodies, in order to enable them to prosecute their devotion and studies with greater ease and facility. All these eleemosynary corporations are, strictly speaking, lay and not ecclesiastical, even though composed of ecclesiastical persons (1 Ed. Raym. 6), and although they partake in some things of the nature, privileges, and restrictions of ecclesiastical bodies.

Corporations are created by common law, by prescription, and by act of parliament. Indeed, by the civil law, corporations seem to have been created by the mere act, and voluntary association of their members; provided such corporation was not contrary to law, for then it was "licitum collegium." The content of the prince does not seem to have been necessary, or to have been actually given, to the foundation of them: but, in England, the king's content is absolutely necessary to the creation of any corporation, either implicit or express. This implicit content is found in corporations which exist by force of the common law, to which our former kings are supposed to have given their concurrence. Of this sort are the king himself, all bishops, parsons, vicars, churchwardens, and some others, who, by common law, have ever been held to have been corporations, "virtue officii," and this incorporation is so inseparably united to their offices, that we cannot frame a complete legal idea of any of these persons, but we must also have an idea of a corporation, capable of transmitting its rights to his successors, at the same time. Another method of implication, by which the king's content is presumed, is as to all corporations by prescription, such as the city of London, and many others, which have existed as corporations for time immemorial, and are therefore regarded in law as well created. The methods by which the king's content is expressly given are either by act of parliament, or by charter. With regard to corporations created by act of parliament, it is observed, that (till of late years) most of these statutes, which are usually cited as having created corporations, do either confirm those which have been before created by the king, as in the case of the college of physicians, erected by charter to Hen. VIII., which charter was afterwards confirmed in parliament; or they permit the king to erect a corporation in futuro, with such and such powers, as is the case of the bank of England (stat. 5 & 6 W. & M. c. 20.), and the corporation of the British East India (stat. 23 Geo. II. c. 4.). So that the immediate creative act was usually performed by the king alone, in virtue of his royal prerogative. All the other methods by which corporations exist, by common law, by prescription, and by act of parliament, are for the most part reducible to this, of the king's letters patent, or charter of incorporation. The parliament, by its absolute and transcendent authority, may perform this, or any other act whatsoever; and actually did perform it, to a great extent, by statute 39 Eliz. c. 5, which incorporated all hospitals and houses of correction, founded by charitable persons; and the same has been done in other cases of charitable foundations. But otherwise it has not formerly been usual thus to intrrench upon the prerogative of the crown, and the king may prevent it when he pleases.

The king, it is said, may grant to a subject the power of erecting corporations, though the contrary was formerly held (Yearbook, 2 Hen. VII. 131); but then, he may permit the subject to name the persons and powers of the corporation at his pleasure; but it is really the king that erects, and the subject is merely the instrument; for though none but the king can make a corporation, yet "qui factit
Thus, the chancellor of the university of Oxford has power, by charter, to erect corporations; and has actually often exerted it, in the erection of several matriculated companies, now subsisting, of trade and other faculties to the students. When a corporation is erected, it receives a name, by which it must sue and be sued, and do all legal acts; and this name is essential to its constitution, for, without it, it could not perform its corporate functions. After a corporation is erected and named, it acquires many powers, rights, capacities, and incapacities, which are necessarily and ineradicably incident to every corporation. These powers and rights are, 1. To have perpetual succession. 2. To sue or be sued, indeed or implied, or be pleaded, grant or receive, by its corporate name, and do all other acts as natural persons may. 3. To purchase lands, and hold them, for their own benefit and that of their successors. 4. To have a common seal, the fixing of which, and that only, unites the several arts of the individuals who compose the community, and makes one joint agent of the whole. 5. To make by-laws or private statutes, for the better government of the corporation; which are binding upon themselves, unless they are contrary to the law of the land, in which case they are void. This right of making by-laws was allowed by the law of the Twelve Tables at Rome. But no trading company, or corporation, by a Table, or make by-laws, which may affect the king's prerogative, or the common profit of the people, under penalty of 40£, unless they be approved by the chancellor, treasurer, and chief justices, or the judge of assize in their circuits; and even though they be so approved, still, if contrary to law, they are void. (19 Hen. VII. c. 7, 11 Rep. 54.) These five powers are ineradicably incident to every corporation, at least to every corporation aggregate; for two of them, though they may be exercised, are nevertheless unnecessary to a corporation sole; viz., to have a corporate seal to testify his sole agent, and to make statutes for the regulation of his own conduct.

To an aggregate corporation belong certain privileges and disabilities, which are not applicable to such as are sole: it must always appear by attorney; it can neither maintain, nor be made defendant to, an action of battery, or such like personal injuries. A corporation cannot commit treason, or felony, or other crime, in its corporate capacity; neither is it capable of suffering a traitor's or felon's punishment. It cannot be executor or administrator, or perform any personal duties; for it cannot take an oath for the due execution of the office. It cannot be feized of lands, to the use of another; for such kind of confidence is foreign to the end of its institution. Neither can it be committed to prifon, for no man can apprehend or arrest it, as its existence is merely ideal; of course, it cannot be outlawed; and, therefore, the proceedings to compel a corporation to appear to any suit of attorney, are always by diffirent on its lands and goods. A corporation cannot be excommunicated, nor is it liable to be harrassed, on any account, into the ecclesiastical court. (10 Rep. 52. Plowd. 538. Bro. Abr. tit. Corporation, 11, 43. Outl. 72.) There are other incidents and powers, which belong to some corporations and not to others: e.g. An aggregate corporation may take goods and chattels for the benefit of itself and its successors, which a sole corporation cannot do. In ecclesiastical and ecclesiastical foundations, the king or the founder may give them laws and statutes, which they are bound to observe; but corporations merely lay, consecrated for civil purposes, are subject to no particular statutes, but the common law, and to their own by-laws, not contrary to the laws of the realm. Aggregate corporations also, that have a head by their constitution, as a dean, master, warden, &c., cannot perform any acts, during the vacancy of the headship, excepting only the appointment of another; neither are they capable of receiving any grant, for such corporation is incomplete without a head. But a corporation aggregate may be constituted without a head, as the church of Southwell in Nottinghamshire, which consists only of prebendaries; and the governors of the Charter house, London, who have no precentor or superior, but are all of equal authority. In aggregate corporations also, the act of the major part is esteemed the act of the whole; by the civil law, this major part consisted of two-thirds of the whole; but with us, any majority is sufficient to determine the act of the whole body: and, for setting this point, it was enacted by statute 33 Hen. VIII. c. 27. that all private statutes shall be utterly void, whereby any grant or election, made by the head, with the concurrence of the major part of the body, is liable to be obstructed by one or more, being the minority; but this statute does not extend to any negative or necessary voice, given by the founder to the head of any such society. At common law, corporations have a capacity of purchasing lands for themselves and their successors; but they are excepted out of the statute of wills (25 Hen. VIII. c. 5); so a corporation by will is good, except for charitable uses, by 43 Eliz. c. 4; which exception is again greatly narrowed by 9 Geo. 11. c. 56. (Co. Litt. 46. L. Raym. S. Co. Litt. 262, 264. 10 Rep. 35. Bro. Abr. tit. Corporation, 31, 34. Hol. 136.) See Mortmain.

The general duties of all bodies politic, confided in their corporate capacity, may be reduced to this single principle: that of conforming to the end or design, whatever it be, for which they were created by their founder. As all corporations are liable to deviation from the end of their institution, they are subject to inspection and visitation. The ordinary is the visitor of all ecclesiastical corporations, so constituted by the canon law, and thence derived to us. Thus, the king (formerly the pope), as supreme ordinary, is the visitor of the archbishop or metropolitan; the metropolitan has the charge and ecclesiastic of all his suffragan bishops; and the bishop, in his several dioceses, are, with regard to ecclesiastical matters, the visitors of all deaneries, and chapters, of all parishes and vicars, and of all other spiritual corporations. With respect to all lay corporations, the founder, his heirs, or assigns, are the visitors, whether the foundation be civil or ecclesiastical; for, in a lay incorporation, the ordinary neither can nor ought to visit. (10 Rep. 31.) The founder of all corporations, in the strictest and original sense, is the king alone; for he only can incorporate a society; and in civil corporations, such as mayor and commonalty, &c., where no possessions or endowments are given to the body, the king is the sole founder; but in ecclesiastical foundations, such as colleges and hospitals, where there is an endowment of lands, the law distinguishes and makes two species of foundation: the one, "fundatio incipiens," or the incorporation, in which fene the king is the general founder of all colleges and hospitals; the other, "fundatio perficet," or the duration of it, in which fene the first gift of the revenues is the foundation, and he who gives them is in law the founder; and thus we generally call a man the founder of a college or hospital. (10 Rep. 33.) But the king has here his prerogative; for, if the king and a private man join in endowing an ecclesiastical foundation, the king alone shall be the founder of it. And, in general, the king being the sole founder of all civil corporations, and the endower the perficet founder of all ecclesiastical ones, the right of visitation of the former results, according to the rule
laid down, to the king; and of the latter, to the patron or endower. The place in which the king visits all civil corporations is the court of king's bench; where, and where alone, all misbehaviours of this kind of corporations are inquired into and redressed, and all their controversies decided.

As to eleemosynary corporations, by the donation the founder and his heirs are of common right, the legal visitors, to see that such property is rightly employed, as might otherwise have defended to the visitor himself; but if the founder has appointed and assigned any other person to be visitor, then his affiance is vested with the whole power of the founder, in exclusion of his heir. Eleemosynary corporations are chiefly hospitals, or colleges in the universities. With regard to hospitals, it has been long held, (Yearbooke, 8 Edw. III. 28. S. Aff. 29.) that if the hospital be spiritual, the bishop shall visit; but if the lay. By Stat. 1. Eliz. c. 5. the bishop is directed to visit such hospitals only, where no visitor is appointed by its founders; and all hospitals, founded by virtue of the statute 39 Eliz. c. 5. are to be visited by such persons as shall be nominated by the respective founders. But if the founder appoint no visitor, the bishop of the diocese must visit. (2 Hal. 725.)

Colleges in the universities were formerly considered by the popish clergy, to whose direction they were subject, as ecclesiastical, or, at least, as clerical, corporations; and therefore the right of visitation was claimed by the ordinary of the diocese. In some of our colleges, where no special visitor is appointed, the bishop of the diocese, in which Oxford was formerly comprised, has immemorially exercised visitatorial authority, which can be merely ascribed to his supposed title as ordinary to visit this, among other ecclesiastical foundations. Nor is it impossible, that the number of colleges in Cambridge, that are visited by the bishop of Ely, may in part be derived from the same original. But whatever might formerly be the opinion of the clergy, it is now held as established common law, that colleges are lay corporations, though sometimes wholly composed of ecclesiastical persons; and that the right of visitation does not arise from any principles of the canon law, but, of necessity, was created by the common law. (Lord Raym. 8.)

In a disputed case, which was reviewed in the court of king's bench, and there redressed under the function of the three punie judges; lord chief justice Holt, being of a contrary opinion, held, that by the common law, the office of visitor is to judge according to the statutes of the college, and to expel and deprive on all just occasions, and to hear all appeal of course; and that from him, and him only, the party grieved ought to have redress. The house of lords, on a writ of error, concurred in this opinion, and reversed the judgment of the court of king's bench. To this leading case, all subsequent determinations have been conformable. But when the visitor is under a temporary disability, the court of king's bench will interpose to prevent a defect of justice. (Stra. 757.) And, it is laid, (2 Littew. 1366.) that if a founder of an eleemosynary foundation appoint a visitor, and limit his jurisdiction by rules and statutes, if the visitor in his sentence exceeds those rules, an action lies against him; but it is otherwise when he mistakes in a thing within his power.

A corporation may be dissolved in various ways: 1. By act of parliament. 2. By the natural death of all its members, in case of an aggregate corporation. 3. By surrender of its franchises into the hands of the king, which is a kind of suicide. 4. By forfeiture of its charter, through negligence or abuse of its franchises; in which case the law judges, that the body politic has broken the condition upon which it was incorporated, and therefore the incorporation is void. In this case, the regular course is to bring an information in nature of a writ "quod warranto," to inquire by what warrant the members now exercise their corporate power, having forfeited it by such and such proceedings. The exertion of this act of law, for the purposes of the statute, in the reigns of king Charles and king James II., particularly by fixing the charter of the city of London, gave great and just offence; but the judgment against that of London was reversed by act of parliament (Stat. 2. W. and M. c. 8.) after the revolution; by which statute it is enacted, that the franchises of the city of London shall never more be forfeited for any cause whatsoever. And, because by the common law, corporations were dissolved, in case the mayor or head officer was not duly elected on the day appointed in the charter, or established by prescription; it is now provided, (Stat. 11. Car. I. c. 4.) that for the future no corporation shall be dissolved upon that account; and ample directions are given for appointing a new officer, in case there be no election, or a void one, made upon the preferptive or charter day. Blackf. Com. vol. 1.

Corporation aetis, is that which prevents any person from being legally elected to any office relating to the government of any city or corporation, unless, within a twelve-month before, he has received the sacrament of the Lord's supper, according to the rites of the church of England; and which enjoins him to take the oaths of allegiance and supremacy when he takes the oath of office; otherwise his election is void. Stat. 13. Car. II. Stat. 2. cap. 1. By this act, all non-conformists were turned out of every department of magistracy at once, and rendered incapable of serving their country in the offices of a common-councillor or a burgess or bailiff of the small corporation. Accordingly they have complained of their insubordination to such offices, in common with the rest of their fellow-subjects, as a grievance, and have often, but hitherto unsuccessfully, fought redress. If they puffed every other qualification, which pertains to loyal subjects and zealous patriots, for occupying civil offices, with the honours and emoluments connected with them, in the corporate towns, to the wealth and prosperity of which they have contributed by their industry and activity, besides external conformity to a religious rite, according to the forms of the established church, which, it has been laid, is no unequivocal and decisive evidence of being actually members of that church, their advocates all say, that they ought not to be excluded. On the other hand, it has been pleaded, that offices of trust and influence should be conferred only on bona fide members of the established church; and that by this restriction, the safety of the church and of the state is most effectually guarded and promoted. How far the corporation and tell acts are founded in justice and found policy, and to what degree they serve to secure our civil and religious liberties, as judge Blackstone conceives them to do, are questions which have been frequently discussed both in and out of parliament; and, by the determination of the majority, they are still continued. For a view of the arguments in their favour and against them, we refer to the article Test. Soon after the corporation act was passed in the year 1601, commissioners were appointed, and employed during that and the following year, to visit the several corporations in England, and to turn out of office such as were in the least suspect. These commissioners executed their office with too much rigour, that the corporations had not one member left, who was not entirely devoted to the king and the church.

Corporation courts are held in corporations, by
The corporeity of God was the capital error of the Antithomorphites. Some authors reproach Tertullian with admitting a corporeity in the Deity; but it is manifest, by Lord, he means no more than fulfance.

The Mahometans reproach the Samaritans at this day, with a belief of the corporeity of God. Many of the ancients believed the corporeity of angels.

Corporeity of Soul. See Form.

Corpification, or the operation of recovering spirits into the same body, or at least into a body nearly the same with that which they had before their spiritualization.

Corps, in Architecture, is a term borrowed from the French, signifying any part that projects or advances beyond the naked wall; and which serves as a ground for some decoration, or the like.

Corps, in Geography, a small town of France in the department of the Ille, in the district of Grenoble, 27 miles S.E. of that place, and six miles N. of lovely. It contains 1238 inhabitants, and the canton, of which it is the chief place, has 13 communes, with a population of 4441 individuals, on a territorial extent of 120 kilometres.

Corps, in Military Language, any body of troops or forces, defined to act in a body together under one person who commands them.

Corps de Bataille, Fr. is the main body of an army that marches between the advanced and the rear-guard.

Corps de garde, Fr. is an inferior poll, which is sometimes covered in, and at other times is in the open air, garrisoned and defended by troops, who are occasionally relieved, and whose immediate and principal duty is to prevent a poll of greater consequence from being surprised. It is frequently a lodgment level with the ground for putting the soldiers under cover, who are directed to defend a poll, and it ought always to be vaulted to provide against accidents by fire. Corps de garde, in the French acceptance of the term, signifies not only the place itself, but also the men, who are stationed there to protect it.

Corps de garde avanzées, Fr. advanced corps-de-garde.—These polls are occupied by cavalry or infantry according to the exigency of the service, and the nature of the ground. When a camp is covered by inrenchments, and has one line of defence, the corps-de-garde, or advanced poll of the cavalry, is on the outside of the line, and each part has its quarter and rear-guard, which are always within view of the field line, unless the irregularity or unevenness of the ground obstruct their view. The quarter-guard, or petty corps-de-garde, is more in front, but always in sight of the main-guard, and the vedette is still farther advanced for the security of both.

In garrisoned places, the officers on guard are indispensably obliged to lodge in the corps-de-garde, without fliriping or taking their clothes off. They commonly quit it but for one hour to dine, and another to sup; and, on particular emergencies, they should even be obliged to take their meals in it, without quitting it at all. If there be any waste and destruction, or breaking of things in it, the commandant must make them be replaced, or made good at the expense of the officers, sergeants, and corporals of the guard relieved.

Corps d'une place, Fr. Body of a place, is that which forms the Enceinte or perimeter of the place, in the directions of the curtains and bastions. For though the buildings in a fortified place are properly enough said to be the body of the place; yet, in the language of fortification, the enclosure round them is generally understood by it. For we say, to confine the body of the place, by which is meant to fortify and enclose it with bastions and curtains.

Corps de Reserve, Fr. Body of reserve: A considerable part of an army posted in time of battle at some distance behind the second line, to be in readiness to furnish succour or support to the weakest polls, or wherever it is most wanted.

Vegetius, an ancient military writer, expresses his decided opinion, that a corps de reserve was indispensably necessary. "It is," says he, "an excellent method, and most contribute greatly to the gaining of a battle, to have in reserve, behind the army, some chosen troops, both cavalry and infantry, under the command of lieutenant-generals, or other superior officers, not employed in the line. Some of these troops are to poll themselves towards the wings, and others towards the centre; being in constant readiness to fly to the assistance of any quarter that may be too hardly pressed, in order to hinder the general disposition from being broken, fill the chasms occasioned by disorder, and check the ardour of the enemy, &c." "If the general, in consequence of not having any troops in reserve, should be obliged to take them from the main body; by thus endeavouring to cover one part, he will only flirip another, and increase the danger of the whole.

When a general has no troops to spare, he had better shorten his front, in order to have the more considerable corps de reserve. He should have one towards the centre, composed of chosen infantry, to form the wedge and break the enemy's line; and likewise, some of cuirassiers pikemen and light infantry, towards his wings, to turn the enemy's. "The two last of these maxims of Vegetius, are founded on the practice of the most able generals before his time. Cyrus took care to have reserves at Thymbra; Julius Caesar made reserves of his cohorts at Pharsalia: Epaminondas defined the divisions of the phalanx to form the embolus at Mantinea: Alexander employed different lines of light cavalry and light infantry at the battle of Arbela: and his successors imitated his example in their orders of battle.

These kinds of reserve had a fixed deslimation: that is, they were placed with a design to attempt some blow against the enemy, or parry any, which he might be supposed to attempt: and in this sense Vegetius says, a general should always have a corps de reserve to form the "Wedge" or "forceps," for if, in order to execute these evolutions, he should take any troops from his line, he may, then, replace the latter with those that are posted in the rear for that purpose.

This manœuvre the Greeks called "parrambolon." Arrian has described it in his "Tactics," and claffed it with the several dispositions of the phalanx. "The natural effect," says Onofander, a military writer, "of a reinforcement of fresh troops, is to inspirit those that join, and dispirit an enemy, already weakened by the length of the engagement." Vegetius and Onofander had established their precepts on the practice of the preceding ages. It appears, however, notwithstanding the acknowledged advantage of the corps de reserve, that the Greeks did not always make use of them, except in a small number of extraordinary instances. They always
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always drew up in a single line of cavalry; depending on the depth of their order, and on their light-armed troops, which they formed into a line, in their front or rear; or poled on their flanks, according to the nature of the ground on which they were to engage.

It appears that this use of the corps de reserve is not very ancient. Vegetius attributes the invention of them to the Macedonians; and says, they were first adopted by the Carthaginians, and then by the Romans. The Greeks, better acquainted with tactics, and better disciplined than the Carthaginians, always engaged in single lines of infantry and cavalry; and they derived courage from the depth and solidity of their phalanx. When they had recourse to corps de reserve, it was not with a design to support one line with another, like the Carthaginians. These corps de reserve were either detached troops, formed expressly to make certain independent manoeuvres; and sometimes bodies poled to frustrate the enemy's ambuscades; and these are probably the troops meant by Vegetius, when he tells us, that the Romans borrowed the use of them from the Carthaginians. The Tribarii, who in their orders of battle formed the ordinary reserve, entered into the composition of their tactics, which had been perfected a long time before they knew anything of the Carthaginians. The modern tactic is the same with that of the Romans, but copied and corrupted. We draw up, says Maizeroy, in two lines, at 300 paces distance from each other, with the cavalry in like manner on our wings. These two lines, which used to be four deep, are now three; so that the depth of the two, taken together, does not equal half the depth of the phalanx: they are even far from equalising, in depth, a single line among the Romans; and the distance between them seems only to increase their weaknisses. With an ordnance so feeble as this of the moderns, reserves are absolutely necessary; and indeed much more necessary than among the ancients. "Troops must be so disposed," says Montecuculi, (B. i. c. 6.) "as to be able to fight again and again: the first line should be the strongest; since it has the greatest efforts to make and to support; the second, a little less; the third may be wholly composed of reserves." When the order of battle is of little extent, it will be impossible to have more than one reserve of infantry and cavalry behind the centre, or at such a distance as to be able to succour any part of the line, that may happen to want it; but, on the contrary, the enemy makes a great front, it will be better to divide the reserve. In this case, it is usual to make three corps of it, one of which is to be stationed behind the centre of the infantry, and the other two behind the wings. In a regular order of battle, the reserve of infantry is generally placed in the centre; and all the cavalry or dragoons, that can be spared for the same purpose, behind the second line of each wing of the cavalry. On this subject, see M. Joly de Maizeroy's System of Tactics, by Mante, vol. ii.

Corps les fœveux, Fr. By this expression was meant the regiments of Picardy, Piedmont, Champagne, Navarre, Normandy, and La Marine, because they were raised or formed before any other regiments, and enjoyed prerogatives in the way of honours and command over all other regiments of infantry.

COPSE. STEALING of, in Law, is not felony, but punishable as a misdemeanour, and indictable at common law; but if a person, in taking up a dead body, steals the shroud, or other apparel, it is felony; for the property thereof remains in the executor, or person who was at the charge of the funeral.

CORPSUND-LES-TROUS-MARKES, in Geography, a town of France, in the department of the Ille et Vilaine; 5 leagues S. of Rennes.

CORPULENCE, or Corpulence, from corpus, the body, signifies an unusual bulk of the body; and as the increase of bulk is commonly produced by an accumulation of fat in the cells of the adipose membrane, it is synonymous with obesity or fatness. The anatomists have denominated it polygonum, from polygon, much, and kystis, the cyst. Corpulence, however, is to be distinguished from the mere size and quantity of muscles, which constitute the athletic structure, and which neither produces disease nor inconvenience, nor occasions any deformity in the appearance of the body.

The fat, which in the living body is generally fluid, i.e., in the state of an oil, is a secretion from the blood, and is deposited in the common cellular sub stance. This sub stance is not only situated under the skin, over the whole body, but penetrates into its inmost recceves, between the different muscles, and even the fibres of the muscles, and enters into the composition of almost all the soft parts. Hence, when the body is corpulent, the fat is found, not only under the skin, but abundantly in the cavity of the belly, about the kidneys and meleture; in the loins; and particularly in the omentum or caul; whence the general protuberance of the abdomen in fat people. It is found also in the cheeks, in the sub stance of the mamma, and about the heart; and it lies between the muscles, filling up the furrows and cavities, and thus rendering the surface of the body and of the limbs round and smooth. With this state of obesity a fullness of the vascular sycium, or a plethora, is usually combined.

When these circumstances are taken into consideration, it must be obvious, that although corpulence may exist to a certain, even to a considerable, degree, in some persons, without being deemed a disease; yet there is a point to which it cannot advance, without being admitted to be a definite, and conducing to the excitement of other maladies, which tend to shorten life. Hippocrates observed, that corpulent persons are shorter-lived, and more frequently die suddenly, than lean people. Aphor. 44. § 2. Great corpulence necessarily contributes to impede the free exercise of the animal functions. The omentum, as well as other parts of the abdomen, being loaded with fat, the deficit of the diaphragm is obstructed, and therefore respiration is performed imperfectly, and with difficulty, and the power of taking exercise is almost totally lost. This load of fat presses also on the large blood-vessels, and on the vireca, and necessarily impedes the full flow of the circulating blood through them. Hence the pulse is generally weaker in fat persons than in others. This general pressure upon the blood-vessels, and impediment to a free circulation, causes an accumulation of blood in the vessels of those parts, where no fat exists, as in the brain and the lungs; whence also respiration is still further impeded, and the functions of the brain are imperfectly performed. Thus the corpulent often grow dull and sleepy, their memory is impaired, and indigestion to motion ensues; and at last, the brain being oppressed with too great fullness, or by a burting of the vessels, they die apoplectic, or are seized with a palsy, which adheres to them for life. The compression of fat in the abdomen extends to the vireca of the pelvis; and Hippocrates has deduced even the fatness, fillikos, from this cause. "But if a woman grows preternaturally fat," he says, "she does not conceive; for the womb is compressed by the superincumbent deflated omentum, whereby conception is prevented." Aphor. 46. § 5. This, however, though frequently, is not invariably, the case. Corpulence also gives
Corpulence.

The predisposition to corpulence is very various in different constitutions. In some persons, a deposition of fat takes place, in spite of a constant moderation in the gratification of the appetite; while in others, the unlimited indulgence of it is not productive of any degree of fatness. This depends much upon other peculiarities of habits: such as a laxity in the habits, which is common, often hereditary; a strong digestive power in the stomach; and a cheerful and contented disposition, which is not ruffled into anxiety by trifling occurrences, (whence the truth of the adage, “laugh and be fat!”) for corroding cares and anxieties disturb the corporeal functions, especially the digestion and assimilation of the aliment, and of course diminish the supply of blood.

The general exciting cause of corpulence is certainly a free indulgence of the appetite, in the use of nutritious food and fermented liquors. A very curiously observation will be sufficient to prove this. For example, it is only among those, who enjoy the means of obtaining the comforts of life without hard labour, that corpulence is at any time observed. The money-making citizen, the substantial farmer, (and more especially their wives, who enjoy all their feeding, with less exercise and anxiety,) the indolent rector, the serjeants of a regiment in pleasant quarters, the masters of well-acquainted inn and post-houses, &c. &c.; these are the people, whose roundness of belly marks the superabundance of their ingesta, and who wheeze and perspire under a load with which they have voluntarily encumbered themselves. It is not so with the active and the laborious, who are also the poorer part of mankind: the porters and ploughmen, the hewers of wood and drawers of water, do not diffuse and encumber their limbs with fatness; the clerk and the sexton do not vie with the rector in prominence of abdomen; and the common folder is sufficiently distinguished from his non-commissioned officers, by the mediocrity of his fize. The fact, indeed, is too well known and admitted to require any illustration. Whenever a person, of a constitution in the least predisposed to fatness, is enabled to indulge in good feeding, and leads a calm indolent life, free from mental inquietude, and using little corporeal exercise, corpulence generally occurs.

The causes of corpulence being thus well understood, the means of diminishing it are not less obvious, as we shall presently demonstrate.

Influences of considerable degrees of corpulence, giving rise to much inconvenience, impeding the functions, and even ultimately leading to fatal deceases, are very frequent in this country, in consequence of the general consumption of animal food. And occasionally, when the constitutional predisposition confines with exciting causes, examples of enormous corpulence occur, which are deemed worthy to be recorded. We shall notice only the following:

Mr. John Love was, in the early part of his life, so thin and meagre, that a tablet, or confection, was apprehended; and having, by the advice of physicians, been provided with every kind of nutritious food, he was led into such habits of indulgence, that he regained himself entirely to the pleafures of the table. Having commenced business as a bookseller at Weymouth, which required little corporeal exercise, he gave full scope to his propensity for good living, and soon grew as remarkably corpulent and heavy as he was before light and slender; his weight amounting to 26 stone, or 364 pounds. At length, suffocated by fat, he died in the 4th year of his age, in October 1792.

The bulk of this man was, however, considerably exceeded by that of Edward Bright, a grocer, of Malden in Essex. The disposition to corpulence was, in this case, hereditary; many of his ancestors having been remarkably fat, and so early as the age of twelve years and a half, he weighed 14 pounds, or 14.4 pounds. Before he attained the age of twenty, he weighed 10 stone, and increased about 2 stone in each year, so that at the time of his death his weight amounted to 44 stone, or 616 pounds. He was 5 feet 9 inches and a half high; his body round the chest, just under the arms, measured 5 feet 6 inches; and round the belly, 6 feet 11 inches; his arm, in the middle, was 2 feet 2 inches in circumference; and his leg, 2 feet 8 inches. He died at the early age of 30 years, in November 1750. The great constitutional predisposition to fatness was here evinced by the circumstance, that from his childhood to within three years of his death, when he became unwellly, he took much exercise, and was a nimble and quick walker. But this predisposition of the constitution was not counteracted by his mode of living; for he had always a good appetite, and in his youth was rather remarkable in that respect, and he drank also a considerable quantity of ale and strong beer; latterly his chief drink was rum beer, of which he usually drank a gallon a-day. He enjoyed good health during the greater part of his life; but within the last three years he suffered several inflammatory attacks, one of which terminated fatally. After his death, seven men of 21 years of age were enclosed in his waistcoat, in consequence of his weight, “without breaking a stitch or straining a button.”

Sennertus mentions an instance of a woman of 36 years of age, who weighed 480, and another of a man whose weight was 600 pounds.

But in Mr. Daniel Lambert, who exhibited himself in London, in the spring of 1786, we have an example of the greatest bulk, perhaps, to which the human body ever arrived. Mr. Lambert was born at Leicester in the year 1750, and was very strong and active in his youth, being an expert swimmer, and much addicted to the sports of the field. Before the age of 20, he found that he was disposed to obesity, and in his 25th year he weighed 30 stone; when he arrived in London, he attained the enormous weight of 35 stone, four pounds, or 704 pounds. His height is five feet, eleven inches. He succeeded his father in the office of keeper of the prison at Leicester; and it was within a year after this appointment, that his bulk received the greatest and most rapid increase. This is justly attributed to the confinement and sedentary life to which he was then obliged to submit; especially, as he had formerly been accustomed to active exercise. Mr. Lambert is said to have been temperate; but we have no particular account of his mode of living, except that, in his younger days, he was never accustomed to drinking, although he spent all his evenings in convivial parties, and that at present he drinks no other beverage than water, and eats of one dish only at a time. It is said that he fearlessly knows what indisposition is, is cheerful and intelligent, without any difficulty of respiration, and not disposed to drowsiness. Notwithstanding his enormous bulk, he is able to go up stairs with great ease, and “conceives himself,” says his biographer, “that he could walk a quarter of a mile.” He measures nine feet, four inches, round the body, and three feet, one inch, round the leg. The feet and hands are not much enlarged, but the skin, stinted with fat, hangs in folds over the ankles. See Eccentric Mirror, vol. i. p. 1. et seq. 1806.

Cure. In the disease of corpulence, (for whatever condition of body impedis any of its functions, even that of locomotion
CORPULENCE.

motion only, must be considered as morbid) the patient must principally minister to himself; the cure, and the prevention, will depend almost exclusively upon the proper regulation of his diet and mode of life, and medicine can only be resorted to in order to relieve any casual effects of the corpulent state. The three principal points to which the attempts to remove obesity, or to prevent its increase in the incipient state, must be directed, are the diet, exercise, and sleep; but more especially to the first, as the source of support and increase to the body.

It is obvious, that where the stomach possesses a powerful digestive faculty, and is capable of converting into chyle every digestible part of the aliment that is taken in, and when the viscera, at the same time, take up this chyle, and deposit much fat, that the most direct method to diminish this deposition, will be to diminish the quantity of the food, or to take articles of a less nutritious quality. Celsus recommends us to take but one meal a day; and this may be partly effected, in this country, by omitting supper, or, at least, by taking no animal food at that time. At dinner, the food should be plain and lean, all piquant and stimulating sauces being dispensed with, and one dish only used: a larger proportion of vegetables than of animal food should be taken, as containing less nutriment; and, upon the same principle, weak animal broths may be much used, as tending, by their bulk, and the dilution of the stomach which they occasion, to allay the uneasy sensations of appetite, without conveying much nutriment matter to the constitution. It will be always useful to attend to the old adage of the temperate, and "rife with an appetite;" or, at least, cafe from eating, before the sensations of appetite begin to arise, and to that no heaviness, or indisposition to active pursuits, may ensue. In a word, whoever would rid himself of the incumbrance of a corpulent habit, must reduce the nutriment which he takes as far as prudence will suffer, and his patience will enable him to submit to. The effect of such a plan, in reducing preternatural obesity, is infallible. "Any one may lose a pound of blood," says Dr. Cheyne, "take a purge, or a sweat; by dropping the great meal, or by abstinence from animal food, or fermented liquors, for four or five days, as effectually as by opening a vein, swallowing a dose of pills, or taking a leucorrhoea bolus." "Elay on Health," p. 35.

The article of drink deferves an equal consideration; and the regulation of it is of scarcely less importance. We have already seen, in the case of Bright, how much the free use of even small beer seemed to contribute to augment his corpulence; and the importance of diminishing the quantity of the drink, will be still farther apparent from the case of the tailor of Billericay, which we shall mention presently. Wine, and fermented liquors, should certainly be omitted; or, if any wine is taken, it should be in small quantity, and much diluted, or the thin acid wines should be used. But water, the beverage of nature, will be generally found to be the most wholesome in such cases. The good effects of a diet, thus reduced and regulated, both in quantity and quality, were long ago illustrated by the example and precept of a noble Italian, Cornaro, who was early incumbered with a corpulent habit, but who relieved himself, and lived in health and comfort to an extreme old age, by a rigid adherence to temperance and frugality. See his treatise Falsa vita fabula. He restricted his diet to twelve ounces of solid food a day, which comprised one egg, and bread; and his drink to fourteen ounces, never including more than one glaif of wine. It has been apprehended, indeed, that a very great change, from a highly nourishing to a very simple, is likely to be productive of serious detriment to the constitution; but the example which we are about to quote, will shew the importance of such a change in the diet, and the extent to which it may be carried, not only with impunity, but with the most beneficial consequences. We will supply the place of a volume on the subject.

The cafe, to which we allude, is that of Mr. Thomas Wood, a miller, at Billericay, in the county of Essex, which is related by Sir George Baker, in the second volume of Medical Transactions of the College of Physicians, p. 259. He was born on the 20th of November, 1719, of parents who were apt to be intemperate in their manner of living, and was subject to various disorders, particularly rheumatism, until he attained the age of thirteen years. He then had the small-pox in a favourable way; and from that time became healthy, and continued to have no complaints, to the age of about forty years; and from his attaining the state of manhood to this period, but especially during the latter part of the time, he indulged himself, even to excess, in fat meat, of which he used to eat voraciously three times a day, together with large quantities of butter and cheese. Nor was he more cautious with respect to strong ale, which was his common drink. About his fortieth year he began to grow very fat; but, finding that he had a good appetite, and digested his food without difficulty, and that his sleep was undisturbed, he made no alteration in his diet. It was in his forty-fourth year when he first began to be disturbed in his sleep, and to complain of the heart-burn, of frequent tickness at his stomach, pain in his bowels, headache, and vertigo. He was now sometimes colicky, at other times in the opposite extreme; had an almost constant thirst, a great loves of spirits, violent rheumatism, and frequent attacks of gout. He had likewise two epileptic fits. But the symptom which appeared to him to be the most formidable, was a state of inflammation, which often came on him, particularly after his meals. Under such a complication of disorders, every day increasing, he continued till August 1764, when the reverend Mr. Powell, a worthy clergyman in the neighbourhood, observing his very ill state of health, and the extreme corpulence of his person, recommended to him an exact regimen; and pointed out the "Life of Cornaro," as a book likely to suggest to him, and make him adhere to a Janitor course of living. This book convinced him that intemperance was the cause of all his complaints; and he determined to try the effects of a change of life. At first he confined himself to one pint only of his ale every day; and used animal food sparingly. Finding this method to answer to his satisfaction, for he felt easier and lighter, and his spirits became less oppressed, he was encouraged to proceed; and, after having pursued this regimen during two months, he dissolved half the quantity from his allowance of ale, and was still more sparing of gross animal food. In January 1765, he left off all malt liquor, and, in the following month, began to drink only water, and to cat only the lighter meats. Under this degree of abstinence, although some of his complaints were relieved, yet others remained in full force; the rheumatism tormented him, and he had, now and then, flight fits of the gout. In June 1765, he began the exercise of the dumb-bell, which he cautiously persevered in. He continued to drink water only until the 25th of October in the same year; but from that time he abstained altogether from drink, (except on the 9th of May in the following year, 1766, when he drank two glasses and a half of water,) and took no liquor whatever, except what he swallowed in the form of medicin. From June 1767, he abstained from butter and cheese; and the 31st of July, in the same year, was the last time of his eating any animal flesh; his diet, from that date, being principally confined to pudding made of tea-biscuit. He allowed himself very little sleep, generally going to bed at eight o'clock in the evening, sometimes even earlier, and rising about.
about one o'clock in the morning, very rarely being in bed after two.

Under this strict course of abstinence he still continued to live till the year 1783, expressing, in the highest terms, the great pleasure and tranquility of mind which he enjoyed in consequence of it. The poor diet, to which he had accustomed himself, became as agreeable to his palate, as his former food used to be; and he had the additional satisfaction, to find his health etablied, his spirits lively, his sleep no longer disturbed by fruitless dreams, and his strength so far improved, that he could carry a quarter of a ton weight; which weight he in vain attempted to carry when he was about the age of thirty years. His voice, which was entirely lost for several years, became clear and strong. In short, to use his own expression, he was metamorphosed from a monster, to a person of a moderate size; from the condition of an unhealthy, decrepit old man, to perfect health, and to the vigour and activity of youth. He used much exercise, his business leading him to ride a great deal on horseback; continued the dumb-bell, and took every occasion of leisure to dig in his garden. Mr. Wood was a great enemy to all fermented liquors, to butter, and to fat; and he found that a pudding of common fermented bread was less agreeable to his stomach than one of sea-biscuit. The pudding, which was his sole support during two years, was made as follows: Three pints of skimmed milk, boiling, were poured on one pound of the best sea-biscuit, broken into pieces: This was done over night, and the ingredients were left to stand together until the following morning, when two eggs were added: This compound, being boiled in a cloth about the space of an hour, became a pudding of sufficient consistence to be cut with a knife. Of this, his quantity used to be one pound and a half, at four or five o'clock in the morning, as his breakfast; and the same at noon, as his dinner; after which, he abstained from food until the next day. But having grown fatter under this diet, he judged it necessary to quit it, as being too nutritious; and during three months he lived on the following composition, viz. one pound of coarse flour, and one pint of water, boiled together. This he was at first much pleased with; but afterwards found it disagreeable to his stomach, and not easily digestible. The pudding which he afterwards used, was composed of one pound of the flour, of which the coarse or ordinary kind of the sea-biscuit is made, boiled with a pint and half of skimmed milk, without any other addition.

Mr. Wood continued in this course of abstinence, lively, active, and full of strength, until the 21st of May 1783, when he died, in the sixty-fourth year of his age, of an inflammation in his bowels, by which his mother and brother had been carried off. A few days previous to his death, he had travelled more than sixty miles on horse-back, without any sense of fatigue.

The principal reason which led Mr. Wood to refrain from drinking, was, that it excited a desire for a larger quantity of food. Much drink operates, he said, as a provocative to eating, as salted meats and high sauces excite a desire for drinking. But, in order to be able to abstain from drinking, the food should be of a more nature, and all dry and salted meats, and indeed every thing commonly called relishing, should be shunned. He did not mean to affect, that any animal can live without moisture; but considered eating his pudding to be the same thing as eating the quantity of dry flour, of which it was made, and drinking afterwards the quantity of water which it contained. See the sequel to the cafe in the 3d vol. of the Med. Tran., by the same writer.

The importance of an attention to the other two points, which we have mentioned, namely, the ufe of exercise, and the regulation of sleep, are also well illuftrated, in this history of unexampled perseverance in a rigid abstinence. The principal value of active exercise consists, apparently, in the increase of the natural discharges, especially of the cutaneous perspiration. The experiments of Sanctusius employed satisfactorily the extent to which the quantity of the fluids, and therefore the weight of the body, are regulated by this discharge; and the diminution of the circulating fluids, the source of the secretion of fat, necessarily implies the diminution of the secretion. Hence the obvious utility of active exercise to those, who are disposed to corpulence; such as various mechanical labours, digging, threshing, &c. or long continued walking, as taking a pedlar's or tradesman's turn, can be observed; since the abstractive considerations of reason alone, seldom conquer the alluring solicitations of appetite and indolence, that the rich man, who fumes sumptuously every day, eats his viands of luxury with less real gratification, than the labourer his coarse and uninviting meal. This will be fully conceded by all who have made the experiment, by a walk of a few hundred miles. Such is the benevolence of nature in equalizing the happiness of mankind!—Beati, fbi bona norma." See Exercise.

Moderation in the quantity of sleep is not less necessary than abstinence and exercise, with a view to the removal or prevention of corpulence. Much sleep implies much inaction, and inaction leads to an accumulation of fluids in the body, and the consequent deposition of fat, in habits predisposed to that secretion. It is impossible to recommend any certain portion of time, which ought to be devoted to sleep, since this must depend upon the peculiarities of individual constitution, as well as of age, &c. For an adult person, of ordinary strength, seven hours, we apprehend, will afford ample restoration of the powers, exhausted during the activity of the day. See Sleep.

Where urgent morbid symptoms arise from corpulence, or where the rules of temperance and exercise are not submitted to, relief may be given by producing evacuations by artificial means, as by directly emptying the blood-vessels by means of the lanceet, or cupping; or indirectly by the use of cathartic medicines, which produce a great discharge of fluids into and through the intestines. But when either of these operations has been frequently repeated, the constitution becomes habituated to them, and actually produces an increased supply of fluids, to compensate the losses; so that evacuations must also be habitually repeated, or a dangerous plethora may ensue. A regular discharge from the bowels is most safely promoted by means of diet; as by the free use of the subacid fruits, either fresh, or preferred with sugar; by the use of coarse bread, instead of that which is fine, &c.

Dr. Flemyng recommended strongly the use of soap, as a diuretic, for the reduction of corpulence, and relates a case, in which the soap, given first in the dose of a drachm once a day, increased gradually to two, three, or even four draughts, and continued for three or four months, effectually removed the accumulation of fat, and its consequences. Whether it operated by increasing the secretion of urine, or, like the vegetable acids, when freely used, by impeding the work of digestion, it may not be easy to determine. But we should apprehend that considerable danger to the constitution might accrue, from the continued use of any medicine, which might act either by morbidly increasing the functions of one organ, or diminishing those of another; and therefore conclude that the regulation of the diet, exercise, and sleep, affords the safest, as well as the most effectual antidote to corpulence. See Dr. Flemyng's pamphlet on Corpulence. See also Col-
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CORPUS, body, in Anatomy, is applied to several parts in the animal structure; as corpus callosum, corpus glanduliferum, corpus reticularium, &c.
Corpus callosum, is a part of the brain. See Brain.
Corpus cavernosum urethre. See Cavernousum.
Corpus cilium, is a term, which includes the anterior part of the choroid coat with all the folds, that connect it to the vitreous humor. See Eye.
Corpus lutum. The corpora lutea are oblong bodies, of a yellowish colour, and glandular structure, only discernible in the ovaria of animals when pregnant. They are supposed to be the calyces, containing the ova. The number of them, therefore, is equal to the number of ova, contained in the ovaria. The corpus luteum is extremely vascular, but the vessels are inconspicuous, until one or more ova become impregnated, when they are enlarged. On the ovum detaching itself, and falling into one of the fallopian tubes, the corpus luteum, or calyx, withers and decays, a cicatrix only remaining, on its upper or more prominent part, whence the ovum had escaped. Its office is to nourish the ovum, or it is the medium through which the nourishment passes to the ovum, until it is fitted to be transmitted to the uterus. That it performs this office appears from hence, there are always as many corpora lutea viable, as there are ova in the ovaria or foetuses in the uteri. Hence the comment of Senes and the practice of Midwifery. This subject will be again noticed under the word ovarium.
Corpus pampiniformes, is a venous plexus, formed by the veins of the testis. See Generation, organs of.
Corpus pampiniforme urethre; the vascu lar sub stance, which surrounds the urethra of the male sex from its membranous part to its termination. See Generation, organs of.
Corpus is also used in matters of learning, for several works of the same name, collected, and bound together.
Of this kind is the corpus juris civilis, or body of the Roman canon law. See Canon law.
The Corpus juris civilis, or body of the civil law, is composed of the digest, code, novels, and institutes. See Civil law; also See Alfo Code, Digest, &c.
We have also a corpus of the Greek poets; and another of the Latin poets. See Body.
Corpus-Christi day, a feast held always on the next Thursday after Trinity Sunday. It was instituted in the year 1264, in honour of the blessed sacrament, to which also a college in Oxford is dedicated. We find it mentioned in 32 Hec. VIII. cap. 21. By which statute Trinity-term is appointed for ever to begin the morrow after this feast. See Term.
Corpus cum caer, in Law, a writ issuing out of chancery, to remove both the body and record, touching the caufe of any man lying in execution upon a judgment for debt, into the king's bench, &c. there to lie till he has satisfied the judgment. F. N. B. 251. See Haberes Corpus.
Corpus cepi. See Cepi.
Corpus kalcarum. See Haberes.
CORPUSANSE, in Meteorology, a name given by mariners to those luminous bodies, which, in thick hazy weather, skip about the mails and yards of ships; and which were the Caelor and Pallus of the Ancients. Corpusane is a corruption of Corpus Santo, as this meteor is called by the Spaniards. Phn. I. u. c. 37.
CORPUSCLE, (from the Latin corpusculum,) a very small body. But large and small being relative terms, it is evident that the very small body is said to be large when compared with a smaller, and small when compared with a larger body. By the word corpuscle, however, in philosophy, is mollly meant one of the elementary, or of the minutest, particles of a body; a physical atom. And here it is necessary to remark, that the exact meaning of the word is far from being determined or understood. By some philosophers the corpuscles are said to be those elementary components of a body, which cannot be divided into smaller parts, but it is not in our power to assert whether such indivisible particles do, or do not, exist. According to others, by the word corpuscles are meant not the elementary particles; but such, whether of a simple or a compound nature, as cannot be dissolved nor disintegrated by the action of an ordinary heat. But this meaning likewise is indeterminate and equivocal. The various opinions of philosophers respecting the constitution of matter are all hypothetical, generally obscure, and often absurd; nor does it appear, that the present state of philosophical knowledge affords data sufficient for investigating the nature of the elementary parts of bodies. Lucretius and Democritus imagined that the component atoms or corpuscles of bodies were of different unalterable forms; that they were continually in motion; and that they were susceptible of a variety of arrangements. Epicurus attributed to the atoms an innate power of mutually affecting each other's motions, and a power of forming all the various natural bodies, according to their different spontaneous arrangements. Des Cartes supposed, that there existed atoms of different forms, and that these possessed no other property besides extension; deriving all their other qualities from the agency of an ethereal fluid infinitely elastic. Other philosophers have supposed that what appears to us as body or matter, is nothing more than an assemblage of properties, such as reliaence, opacity, &c. for they say, the idea we have of a body before us, is something which obstructs the fight, or hinders the motion of our hands, &c. therefore we ought to conclude that the object we perceive is nothing more than an assemblage of those properties by which it is rendered manifest to our senses. In short, the real constitution of matter, and of its ultimate elementary components, is so far removed from the gross apprehension of our senses, and even of our reasoning faculties, as not to admit the formation of a true, or at least a plausible theory. Therefore the word corpuscle must be allowed to remain an expression of a relative nature. See Matter.
CORPUSCULAR ATTRACTION, denotes that power by which the minute component particles of bodies are united, and adhere to each other. It may be distinguished into attraction of aggregation; viz. that power by which the homogenous particles of bodies are united; and attraction of affinity or of composition, viz. that power by which the heterogeneous particles of bodies are united.
The phenomena of aggregation may be said to comprehend the greatest part of the operations of nature. The various consistencies of bodies, the yielding softness of leaves, the rigid hardness of others, the crystallization or regular configuration of several substances, the various appearances which are often ascribed to the same body under different circumstances, &c. are all depending upon the different degrees of that power, whatever it be, by which the particles of bodies tend towards each other. But though the effects of that power fall continually under the cognizance of our senses; though the formation of the parts of our bodies in their different state of consistency, tenacity, &c. and the fabric of the universe, depend almost entirely upon it; yet we must reluctantly acknowledge our ignorance of its nature. And whilst we endeavour to investigate, and to ascertain the laws under which it acts, so as to apply the same
Cor.

29. The depositions of earthly or saline matters from their solutions in water and other menstrua, whence flask concretions, petrifactions, crystallized salts, and such like aggregates are formed, have been commonly observed to be much more compact and regular when the process has been performed during a considerable length of time, than when quickly. Thus certain waters after having been kept in a glass or bottle a few hours, and even after a few minutes, deposit a considerable quantity of earthy matter; but that matter, so quickly deposited, generally, if not always, is in a loose powdery state; whereas the very hard incrustations are formed by the very slow deposition of the minutest particles. Thus also let a saline solution be evaporated quickly, and the salt will be deposited in a shapless and powdery state; but if the evaporation be suffered to proceed slowly, as by the mere exposure of the solution to the atmosphere in an open vessel, then the salt will be concreted in the form of crystalls, positing a regularity of form, and a considerable degree of hardness. With respect to the form, it is farther to be remarked that almost every species of matter, when the formation of it is suffered to proceed slowly, assumes a certain shape, or arranges its particles in a certain order, peculiar to itself. Now these facts seem clearly to point out a kind of polarity in the particles of matter, which is somewhat analogous to the magnetic polarity; viz. that a particle of matter does not attract another particle on every side indiscriminately; but that one particle attracts another with one side and repels it with another side; like two magnets, the homogeneous poles of which repel, and the heterogeneous, (that is, a south and a north pole,) attract each other. Upon this principle the above mentioned phenomena of depositions are easily explained; for when the deposition proceeds gradually, the particles of matter have time and liberty to turn their friendly pole or extremity towards each other, in consequence of which they form a compact and hard body; but when the deposition is performed suddenly, the repellent extremities of the particles of matter, as well as their attractive ends, fall confusedly, and of course no hardness of aggregate will be obtained. The science of electricity offers another instance of two powers attractive of each other, but each repulsive of its like; viz. two bodies both posseâ of the same kind of electricity, (be it vitreous or resinous, plus or minus,) will repel each other. But when one of the bodies is electrified positively, and the other negatively, then the two bodies will attract each other. But in attributing a fort of polarity to each particle of matter, we would not be understood to affert, that they are either magnetic or electrical; on the contrary it appears that their attractive power is of a very different nature; and we only wish to shew that such difference or peculiarity does exist, and that the attraction of the particles of one fort of matter is in some way or other different from the attraction of the particles of a different substance; otherwise the different forms of their crystalls or configurations could not possibly take place. We may, for instance, suppose that the particles of a certain body are oblong, and that one extremity of one particle attracts one extremity of another particle, or we may suppose that the middle of one particle attracts the extremity of another. We may also suppose that the shape of the particles of one kind of matter is different from the shape of others; some for instance, may be globular, whilst others are cylindrical, others angular, and so forth. But with respect to this, nothing certain is known.

30. Though the fusion of substances by heat may be considered as a solution of the substances in that clement; yet
yet the effects which arise therefrom cannot be entirely reconciled to the above-mentioned phenomena of solution; and indeed the former frequently appear to follow a law diametrically opposite to that of the latter. The peculiar circumstance is, that, by cooling suddenly, most substances become much harder than when they are slowly cooled and rendered solid; so that if the hardening of the body after fusion be considered as a deposition from the element of heat, the effect is by no means similar to that of the depo-
sitions from water and other fluid menstrua. It is, how-
ever, to be remarked that the superior degree of harden-
ing of substances when quickly cooled, depends, in great measure, if not entirely, upon a mechanical circumstance, which is, that the external parts of the body are suddenly hardened whilst their internal parts are yet fluid, or much expanded; so that the former will not adjust their figure to the latter when these are afterwards rendered solid and compact; hence the whole aggregate remains in a state of ten-

tion, upon which the peculiar degree of hardness seems to de-
pend. What particularly corroborates this supposition is, that a body hardened by sudden cooling, is larger in its di-

mensions, than when cooled slowly. Mr. Cavaldo, is the 2d vol. of his Nat. Phil. p. 77, mentions a very remarkable influence of this kind. Mr. Rt. Pennington, he says, mea-
sured a piece of steel in its hot flat, and found it 2,760 inches in length. After hardening by plunging it, when red-hot, in cold water, the same piece was found to mea-
sure 2,778.5 inches; and when let down, or softened, to a blue temper, it measured 2,768 inches. See the article Contraction.

4thly. The attraction of aggregation is counteracted by the attraction or affinity of composition. In other words, the mutual attraction of the homogeneous particles of bodies, is diminished by the attraction between the heteroge-

neous particles of matter; and the action of the former is inversely as that of the latter. Thus the component particles of a metallic body form a very compact aggregate in virtue of their mutual attraction: but if the metal be placed in an acid menstruum, then the particles of the metal are separated, because the attraction between them and the acid is stronger than their own mutual attrac-
tion.

Heat likewise separates the particles of bodies; a metal-
icallubance, for instance, is fused by heat; but the solu-
tion in a menstruum is on various accounts different from the solution, or fusion, by heat; we must, however, refer the farther discussion of the subject to other articles. See Affinity, Crystallization, Fusion, and Solution.

CORPUSCULAR PHILOSOPHY, that scheme or sys-
tem of physics, wherein the phenomena of bodies are ac-
counted for, from the motion, ref, position, arrangement, &c. of the minute corpuscles, or atoms, whereof bodies are com-
posed.

The corpuscular philosophy, which now flourishes under the title of the mechanical philosophy, is exceedingly ancient. Leucippus and Democritus were the first who taught it in Greece; from them Epicurus received it, and improved it, insomuch that it came at length to be de-

nominated from him, and was called the Epicurean phil-

osphy.

Leucippus, again, is said to have received it from Mo-

chus, a Phaenician physiologist, before the time of the

Trogan war, and the first who philosophized about atoms: though Gale, who borrows all profane philosophy from the sacred philosophy in the books of Moshe, is of opini-
on that he might take the hint from the Mosaic his-
tory of the formation of man out of the dust of the earth.

Indeed, Cusabon takes Moshe, or Moshe, to be the name

t of a Tyrrian, who among his own countrymen was called

Moshe, or Mochus, or according to the method of writing which

then obtained. Mochus: whence it is conjectured that the

Moches, or Mochus of the Tyrrians, was, in effect, the

Moses of the Hebrews.

This appears to be the sentiment of Selden, Archibus,

&c. But the opinion of Bohart is more probable, who,

from Ptolemon and others, takes Mochus for an inhabit-

ant of Sidon, and his philosophy to be nothing else but a

physiological or natural history of the creation.

After Epicurus, the corpuscular philosophy gave way to

the peripatetic, which became the popular system.

Thus, in heat of atoms, were introduced specific and

substantial forms, qualities, sympathies, &c. which amused

the world, till Gassendus, Charleton, Des Cartes, Boyle,

Newton, and others, retrieved the old corpuscularian hy-
pothesis; which is now become the basis of the mechanical,

and experimental philosophy. See Atomic Philosophy.

Mr. Boyle reduces the principles of the corpuscular phi-

losophy to the four following heads.

1. That there is but one catholic, or univerfal mat-

ter, which is an extended, impenetrable, and divisible

substance, common to all bodies, and capable of all forms.

This is the foundation of the philosophy of Isac

Newton improves upon in the following man-

ner: "All things considered, says that great author, it ap-
pears probable to me, that God, in the beginning, created

matter in solid, hard, impenetrable, moveable particles; of

such sizes and figures, and with such other properties, as

were conducted to the end for which he formed them: and

that these primitive particles, being solids, are incompar-
ably harder than any of the sensible porous bodies com-

pounded of them; even so hard as never to wear, or break in

pieces: no other power being able to divide what God made one

in the first creation. While the corpuscles remain entire, they

may compose bodies of one and the same nature and texture

in all ages: but should they wear away, or break in pieces,

the nature of things depending on them would be changed:

water and earth, composed of old-worn particles, would

not be of the same nature and texture now, with water

and earth composed of entire particles at the beginning.

And therefore, that nature may be lasting, the changes

of corporeal things are to be placed only in the various

separations, and new associations, of these permanent cor-

puscles." 2.

That this matter, in order to form the vaft variety of

natural bodies, must have motion in some, or all its affi-

nable parts; and that this motion was given to matter by

God, the creator of all things; and has all manner of di-

rections and tendencies.

These corpuscles, says Sir Isac Newton, have not only

a vis inertiz, accompanied with such passive laws of motion

as naturally result from that force; but also are moved by

certain active principles; such as that of gravity, and

that which causes fermentation, and the cohesion of bodi-

es."

That these differently sized and shaped particles have
different orders, positions, situations and pollutes, from

whence all the variety of compound bodies arises.

CORRA, in Geography, a town of Persia, in the pro-

vince of Segellan, on the lake Zare: 15 miles S.E. of

Kin.—Also, a river of Persia which runs into the lake

Zare, near the town of Corra.

CORRAAN, a peninsula of Ireland on the west coast

of
of the county of Mayo, separated from Achill island by a narrow channel. It is in old maps, and even in some modern ones, erroneously represented as an island. It is about seven miles from sea to sea, and from two to four miles wide. The country is mountainous and very thinly inhabited. See Byssumology.

CORRADINI DE SERRA, Peter Marcellinus, in Biography, was intended for the study of the lep., and became, in that profession, so distinguished as to attract the notice of pope Clement XI, who appointed him to honourable and confidential offices. Disqualified, however, by the intrigues of the court, he gave himself up to retirement, for the purpose of applying to literary pursuits. Here he remained till he was created cardinal by pope Innocent XIII. This dignity he enjoyed more than 20 years, and died at Rome in the year 1743, having attained to his 83d year. This cardinal was author of a learned and curious work, entitled "Vetus Latium, præsum. et sacrum," in two vols. folio: likewise a history of his native place, entitled "De civitate et eccleliae Settina." He is said to have written other works under assumed names.

Correa, in Botan. Syn. Transl. Lin. Soc. pp. 4, 210. Wild. v. 2. 324. Clas. and Order, Oedandra Monogynia. Nat. Ord. Rutacea, Jaff. Named by Dr. Smith in honour of Joseph Correa de Serra, L.L.D. F.R.S. F.L.S., a learned Portuguese botanist, late secretary to the Academy of Sciences at Lisbon, and chief director of that body under the auspices of its illustrious president the late duke of Lafuente, who was always warmly attached to Mr. Correa, under various difficulties and contrarieties to which his senile and liberality exposed him in that bigotted country. After a refidence of some years in England, where he obtained and deferred the ecleem of all the most distinguished naturalists, he is now cultivating his favourite science at Paris. See Sm. Exot. Bot. v. 72, and Tour on the Continent, ed. 2. v. 1. 357, and v. 3. 175.

This same genus has received the hard name of Mazentoxeron from M. la Billardiere; but fortunately long after it was published, unknown to him, by the Linnaean Society. Mr. Correa had indeed already received the honour of a genus from his countryman Vandelli, but it proves to be a species of Ocbra.

Gen. Ch. Cal. of one leaf, bell-shaped, regular, with four teeth, inferior, permanent. Cor. regular: Petals four, linear-blong, coiling longitudinally, externally clothed with flary pubescence; spreading at their summits, and obtuse. Stam. Filaments eight, awl-shaped, smooth, dilated towards the bottom, four of them somewhat longer than the rest. Anthers seifile, incumbent, oblong, of two cells, curling longitudinally, without any appendage. Fil. German superior, brily, four-lobed. Style thread-shaped, about as long as the stamens, smooth. Stigma in four small acute lobes. Capsules four, coiling longitudinally, coriaceous, each lined with an elatic arilus. Seeds two in each capsule, back, kidney-shaped. The fruit, which we have but lately known in perfection, proves this genus to belong to the Rutaceae, not the Rhododendron, of Jussieu, and its essential character requires correction.


Sp. 1. C. alba. White-flowered Correa. Wild. Sp. Pl. v. 2. 324. Andr. R. p. 18. (Mazentoxeron reflexum, Billard. Fig. p. 175) Leaves roundish, even, entire. Flowers erect.—A shrub four or five feet high, much branched; the branches opposite, dawny and white. Leaves opposite, on short and branchy white footstalks, of a roundish elliptical obtuse form, entire, even, not undulated, fingle ribbed, green, but sprinkled with minute dots of white flary deciduous pubesence above; very white beneath, and clothed with dense pubescece, which, like that of the whole genus, consists of closely entangled flary or clustered hairs. Stipules none. Flowers terminating the small branches, solitary, or two or three together, on shortish stalks, upright, white. Calyx very obliquely four-toothed. Petals four times as long as the calyx, coiling when young, then spreading into a funnel shaped flower. Stamens rather shorter than the petals, with red anthers. The petals, calyx and flower-stalk are all clothed with the same white flary pubescence as the backs of the leaves, which when for some time dried, turns of a rufly hue; and this must account for Billardiere's specific name, his description having apparently been made from dried specimens after his return home. This plant is a native of New South Wales near Fort Jackson. It was originally found by Sir Joseph Banks and Dr. Solander. We first saw it growing at Meffes. Lee and Kennedy's, Flowersmith, flowering in May and June. It is a hardy green-houe shrub, propagated by seeds or cuttings, requiring peat earth, and regular supplies of water.

2. C. viridiss. Green-flowered Correa. Sm. Exot. Bot. v. 2. 25. t. 72. (C. viridiss. Andr. R. p. 18. 1856, with an erroneous reference to Billardiere; see the preceding species. This seems his Mazentoxeron reflexum, t. 19.) Leaves oblong, undulated; heart-shaped at the base. Flowers pendulous. Calyx teeth elongated.—A taller shrub than the foregoing, which first flowered at the margins of Blandford's at White Knight's, Bers, the seeds having been sent from New South Wales. It thrives well under a warm wall in the open air with a little covering in winter, and flowers in the autumn. The branches are numerous, divaricated and forked, clothed when young with clustered rufly pubescence. Leaves short stalks, reflexed, oblong, bluntish, venous; heart-shaped at the base; undulated and somewhat revolute at the margin; green, dotted and roughish above; densely pubescent and whitish beneath. Flowers terminal or axillary, solitary, pendulous, with a pair of narrow bracts a little below the base of the calyx. Calyx-teeth very perceptibly elongated, linear. Corolla cylindrical, the petals coiling strongly, except at the base and summit, all over downy and of a pale green. Stamens longer than the corolla. Capsules white, hairy. Seeds black. It varies with triphid as well as quinqefid flowers, but its natural and general structure is quadrifid, like the other species. The flowers are without smell, as far as we have been able to observe, but their aspect is singular and elegant.

3. C. rubra. Red flowered Correa. Banks & Hook. Ind. and Bibl. Linn. Leaves oblong, undulated; somewhat heart-shaped at the base. Flowers ascending. Calyx-teeth obsolete.—This has so much of the habit and general structure of C. viridiss, that it is difficult to detect a specific difference. The leaves indeed are more commonly ovate than heart-shaped at their base, though variable in this respect; the flowers grow rather upright than pendulous, and their calyx is almost perfectly even at the edge, with scarcely any rudiments of teeth, and nothing like the linear elongations observable in the last, which form its most decisive character. The plant however is chiefly remarkable for the crimson hue of the corolla, which, contrasted with its green extremities, renders this one of the handiest New Holland shrubs, and it is to be regretted, that though dried specimens have been brought from its native country, no seeds have vegetated
our gardens. The flower-beds and their cups look exactly like small acorns, and we have known them gathered for the seeds. Sir J. Banks and Dr. Solander first discovered this species. S.

CORRECTED CALENDAR. See Calendar.

**Correction**, or Chastisement, in the *Muras*, denotes any method that is used to awe or punish a horse, when he disobeys; and is distinguished from *aid*, which signifies any means that are used to assist or direct a horse, and that enable him to execute whatever he is put to do. Accordingly, aids seem to prevent, and corrections to punish, whatever faults a horse may commit. See Aid. Corrections are of two sorts: you may punish your horse with the spurs, the switch, or chambriers; you may punish him by keeping him in a greater degree of subjection; but in all these cases, a real horsemanship will endeavour rather to work upon the understanding of the creature, than upon the different parts of his body; for a horse has imagination, courage, and real judgment, which three faculties, duly regarded, will be likely to ensure success. The corrections, which reduce a horse to the greatest obedience, and that dishearten him the least, are such as are not severe; but such as are opposite and thwart the horse in thwarting him in what he wants to do, by restraining and putting him to do directly the contrary. If your horse do not advance or go off readily, or if he is sluggish, make him go sidelong, sometimes to one hand, sometimes to the other, and drive him forward, and do alternately. If he goes forward too fast, being extremely quick of feeling, moderate your aids, and make him go backward some steps; if he presses forward with hurry and violence, make him go backward a great deal. If he be disorderly and turbulent, walk him straight forward, with his head in and crouse out. These sorts of correction have great influence on mott horses.

But with horses of an obdurate and rebellious disposition, correction of a more severe kind may be necessary; and yet in the use of it requires great prudence and management. The spurs, properly applied, are of considerable service in aweing and correcting the animal; but when used improperly, they make the horse subject and disdain, relive and vicious. The horsemanship must not, therefore, be too hastily in applying this correction. To give the horse both spurs properly, you must change the pollure of your horse, and, bending your knee, strike him with them at once quick and as firmly as you can. Take care never to open your thighs and legs, in order to give both spurs; for the action, becoming thus irregular, could never produce a good effect. The chambriere, as a correction, should be used with discretion; and the switch is not often employed for punishment. Brerenger's Hilti. and Art of Horsemanship, vol. ii. ch. 9. See Aid.

**Correction**, in *Pharmacy*. This word has several peculiar senses: and first, drastic medicines, or such as operate with violence, are said to be corrected, when in composition some ingredient is added, which proves a kind of check to the operation, or prevents those misfortunes which they generally bring, without such correcting ingredient. Thus, for instance, some carminatives, as the seeds of fenel or amice, are added to fena leaves, which, when exhibited alone, generally excite flatulanties and gripes. The flatulences or ingredients thus added, with an intention to render the medicines more efficacious, are called *corregenti*, or *correctors*, *cathartica*, or *infringenti*. Secondly, medicines which operate in a slow and laud manner, are said to be corrected, when they are so prepared as to accelerate or augment their operation: when, for instance, faults are mixed with evacuating medicines of a gummy or raw influence, that by means of being more resolved or attenuated, they may operate more powerfully. With this intention salt of tartar, or *sal picrocristallina*, is added to infusions of fena.

Ingredients added with this view are called *corregentia*; and when more dracal substances of the same virtues are added, in order to augment the operation of the compositions, these are called *acquenta*. Thirdly, nauseous and ungrateful medicines are said to be corrected, when they are prepared in such manner as to be more agreeable and acceptable to the palate. James.

**Correction**, in *Printing*. The act of retouching the faults in a work, or the reading, which the corrector gives the first proofs, to point out and amend the faults, to be rectified by the compositor.

The corrections are placed on the margin of each page, right against the line where the faults are found. There are different characters used to express different corrections, as *D* or *d* del, for any thing to be erased, or left out. When any thing is to be inserted, the place is marked in the line with a caret, and the insertion added in the margin.

When a word, syllable, &c. is to be altered, it is crossed out, or the proof, and that to be put in its room written in the margin; always observing, if there be several mistakes in the same line, that the corrections in the margin be separated by little bars, or ilrokes. If a space be omitted, its place is marked with a caret, and the margin with *. If a space be wrong placed, as in the middle of a word, the two parts are connected with a caret, and the same character put in the margin. If a letter be inverted, it is expressed on the margin with 7. If any thing be transposed, it is marked thus: The *foart* | are the *foli* | left; for the *foart* | folis | are the left; and in the margin is added *tr* in a circle.

If Roman characters are to be changed for Italic, or vice versa, a line is drawn under them thus, and *Roman* or *Italic* added in the margin; if to capitalls, a double line. If a word or sentence is entirely omitted, the place is marked with a caret, and in the margin is inserted the word out. If the letters of a word stand too far afar, a line is drawn under them, and in the margin is put a crooked line, or hook, thus —

**Correction**, in *Rhetoric*. See *Epanorthosis*.

**Correction of Apprentices**, in *Law*. See *Apprentice*.

**Correction of Children**. See *Parent*.

**Correction of Schoolers**. See *Schoolmaster*.

**Correction of Servants**. See *Servant*.

**Correction of Wives**. See *Covverture*.

**Correction, House of**. See *House of Correction*.

**CORRECTOR** of the Staple, an officer, or clerk, belonging to the staple, who makes and records the bargains of merchants there made, anno 27 Edw. III. stat. 2. cap. 22, 23. The Romans called them *menfarii*.

**Correctors**, in *Pharmacy*, such ingredients in a composition as guard against, or abate, the force, or dangerous qualities, of others. See *Correction*.

**CORREDIUM**. See *Corody*.

**CORREGA**, in *Geography*, a town of Portugal, in the province of Estremadura: 10 miles N.N. E. of Peniche.

**CORREGGIO**, or **COREGGIO**, da, *Antonio*, in *Biography*, an Italian painter of the first eminence. The family name of this distinguished genius was Allegri, being called Corgggi from a small city in the state of Parma, which gave him birth in the year 1494. Upon this point, as well as the period of his death, authors are pretty well agreed; but the other circumstances of his life are wrapped in doubt and conjecture.

Giorgio
Giorgio Vasari, the first biographer of the painters, considers the fate of this divine artist, whom he represents as a melancholy turn of mind, timid and diffident of his own powers, burdened with a numerous family, which, with all his prodigious talents, he could scarcely support; ill-recompensed for his works; and terminates the sad story by informing us, that, having received at Parma a payment of fifty crowns in copper money, he caught a fever, in the exertion of carrying it home on his shoulders, which occasioned his death.

Whoever compares the moderate sums Correggio received for his principal works, with the magnificent rewards heaped upon Raphael, Titian, and Bononrot, nay, even upon Vasari himself, cannot feel surprized that the Florentine historian should thus laud the untoward fortune of the great Lombard artist. The picture, however, is exaggerated, and, upon investigation, it must clearly appear, that the situation of Correggio, though far beneath his merits, was in no wise deplorable. The family of Allegri was highly respectable, and possessed considerable landed property, which is said to have been augmented by the earnings of Antonio; and, so far from having died of the fatigue of bearing home the copper money, he was usually paid in gold, as appears from existing documents. For the Cupola and Tribuna of the church of St. Giovanni, he received 472 fiorini; for that of the Duomo, 350, payments by no means inconceivable in those times. For his celebrated Notti he had 40 fiorini; for the St. Jerome, which cost him six months labour, 47, besides his board during that period; but when from these sums we deduce the expense of his models and colours, which were ever of the best quality, it cannot appear probable that he acquired great riches; and, we may conclude, that screened from the evils alike attendant on penury and influence, he enjoyed the enviable situation described in the prayer of Agur the son of Jakeh. It is a tradition, in Correggio, that our young student acquired the first rudiments of his art, from an uncle named Lorenzo; he afterwards, according to Vedrani, in his "Lives of the Modenese Painters," frequented the school of Francesco Bianchi, called Il Fari, at Modena; there he acquired that practice in modelling so advantageous to a painter, and for which the Modenese artists were so celebrated, and there he is said to have formed a friendship with Ant. Begarelli, whose admirable works in that way drew the highest eulogiums from the great Michelangelo. After this period, we are informed, that he visited Mantua, and became the disciple of Andrea Mantegna; this could not, however, have been the case, as Mantegna died in 1506, though there is great reason to suppose, that the fine works of that ancient artist contributed not a little to accelerate the progress of Antonio's studies. Some affright, that Antonio was not the scholar of Andrea, but of Francesco Manguina his son, an artist of no mean talents, and who was much employed in Mantua after his father's death: the abbe Lanzi seems to subscribe to this opinion, and mentions several juvenile productions of Correggio there remaining, wherein the germs of future excellence appear, blended with somewhat of the rigid style of the old school.

It has been suppos'd by some writers, that Correggio, intrigued by the desire of beholding the Frescoes of Raphael in the Vatican, visited Rome; and, we are told, that after having long gazed on those celebrated works, conscious of his own transcendent but less regarded talents, he broke forth into the memorable words, "And I am a painter!"—But Lanzi, who has taken great pains in the investigation, is of opinion, that the story has no foundation, and that Antonio never saw Rome.

It would exceed our limits to enumerate any more than the principal works of this divine artist: his earliest picture of note was painted in 1512, at the age of eighteen; in it is represented, the Madonna seated on a throne, with on each side St. Anthony and St. Francis; even in this production, the dawning genius and native grace of Correggio appear, though it possest little of that breadth of effect which afterwards so eminently distinguished his works; he advanced, however, with giant strides, for we find that in 1518, or 1519, when he painted in the monastery of St. Paolo at Parma, a room in Frecno, with poetical devices, cupids, &c., he had sufficiently established himself in that novel, beautiful, and luxuriant style, which became the never equalled model of the artists of Lombardy, and the imitation of succeeding ages; but his greatest works in fresco are, the Cupola of the church of St. Giovanni, and the Duomo, in the last mentioned city; in the former cupola, which, together with the tribuna, since demolished, was executed from about 1520 to 1524, Correggio represented the Assumption of Christ, surmounted by the Apostles, who, seated on clouds, supported by the Angelic Host, regard the Saviour. The boldness of the foreshortening in this work, the grand style of drawing, the elevation of character in the heads, added to an assimiling breadth of light and shadow, rendered it a miracle in the art hitherto unexampled; the tremendous Last Judgment of Michelangelo, not having been executed till many years afterwards. So wonderful a production could only be supported by the artist himself, who, in 1530, completed his matchless work in the Cupola of the Duomo; here the Madonna, in an attitude the most exquisitely expressive of devotion and beauty, rife majestically amidst myriads of saints and angels, who, gazing with each other, in their demonstrations of joy at the arrival of the virgin mother of Christ, strike the listener, the loud trumpet, or join in the mazes of the celestial dance; whilst below, are introduced, as usual, the Apostles, who, with the most dignified expressions of awe and astonishment, behold her assumption; and here we must observe, that if the great Michelangelo, in the gloom of his fluendous last judgment, has reached the summit of the terrible axia, Correggio has, in the radiant splendour of his work, touched the pinnacle of that sublime which arises from the contemplation of the more confounding attributes of the Divine nature, love and joy. Of the altar pieces, and smaller works of this master, the following are amongst the most celebrated: the Madonna, with St. George, and other figures, in the gallery of Dreifden, where the little angels are so beautifully introduced, playing with the helmet and sword of the Christian Hero: the famous Notte, or adoration of the Shepherds, in the fame collection, where the most striking effect is produced by the principal light being made to proceed from the child; a most exquisite idea, in which Correggio has been followed, though at an humble distance, by almost every painter who has since treated the subject; the Magdalen, in the defart reading, a very small picture, well worthy the magnificent frame fct with jewels which surroun it: the celebrated Madonna, with St. Jerome, and the Magdalen; which latter figure, in point of grace, flanks unrivalled in modern art; this picture is now in the Louvre at Paris. But a volume would not be sufficient to point out—the beauties leattered with so lavish a hand throughout the works of Correggio; and when we contemplate the hard and dry manner of painting in use amongst the artists of Lombardy when he appeared; when we reflect that he never visited either Florence, Rome, or Venice; that he had few of those advantages of education or example which the works of Signorelli Ghirlandaio, Du
C O R

Vinci, and Fra Bartholomeo, furnished to the more fortunate artists of Lower Italy. Rafaelle, Michælangelo, and Del Sarto; and when we reflect, that notwithstanding these disadvantages, Antonio, single-handed, and alone, at once effected so extraordinary a revolution in the system of painting, changing harsh colouring and frittered light and shadow for ambient hues, union of effect, and never equalled breadth of chiaroscuro, Mengre Skeleton-like forms for simplicity and grandeur of design: we cannot deny that he was one of the most extraordinary geniuses ever vouchsafed by heaven, for the guidance and advancement of mankind in the paths of art. He died A.D. 1534, aged 40. As we have occasion to speak of the merits of this divine artist, in our inquiries concerning painting, we beg leave to refer the reader to those articles. See Painting, Invention, Composition, Design, Expression, Clair Obscur, and Colouring.

CORREGIDOR, the name of an officer of justice in Spain, and countries subject to the Spanish government. He is the chief judge of a town or province.

CORREGIO, in Geography, a town of Italy, and capital of a small principality, in the duchy of Modena, united to the Modenese in 1635; defended by a castle; 8 miles N. W. of Modena, and 25 S. of Mantua.

CORRELATIVE, something opposed to another in any certain relation. Thus, father and son are correlatives; pater & filius filio respondent. Light and darknes, motion and rest, are correlatives and opposite terms.

CORRESPONDENCE, or Correspondency, denotes the relation and reciprocal adaptation of one thing to another; and also intercourse and frndship.

Correspondence, in Military Affairs. By our articles of war an officer, non-commissioned officer, or soldier, that corresponds with the enemy, is liable to suffer death. Such a correspondence is also forbidden or interdicted in other countries, under pain of death, in case of disobedience, to every military person of whatever rank, and to every one dependent on the army, in time of war, without the permission of the general who commands, or the governor or commander, if it be in a garrisoned place.

CORR��ZEA, the Department of the, in Geography, one of the nine departments in the south of France, was formerly a part of the province called Limousin, and derives its name from the river Corrèze, which partly flows through it from north to south, varying a little towards the west. It is bounded on the north by the department of the Creuse; on the east by the department of Cantal and that of Puy de Dôme; on the south by the department of the Lot; to the south-west by that of the Dordogne, and to the north-west by that of the Vienne.

Though watered by several rivers, as the Corrèze, Vezère, Dèze, Luzège, Truvillonne and Douffre, the department of the Corrèze has no interior navigation; its rivers are not navigable, but they yield abundance of fish, particularly salmon and trouts. Towards the north there is a chain of high mountains, called Mille Vaches, which are covered with snow a considerable part of the year. The climate is temperate; the soil rather bad, producing little wheat, some barley, rye, buckwheat, and turnips for cattle; but the meadows yield excellent hay. Hence there is a great trade in horned cattle, horses, mules, and fitchep, which are very fine, and the breed of which has been improved by a Spanish flock. Grazing is the chief employment of the inhabitants; their horses are reckoned very good.

The wines of the department of the Corrèze are tolerable; that which is made in the neighbourhood of Brives is reputed almost equal to Burgundy. Game is abundant; there is also plenty of excellent chefsants, which in some cantons make amends for the facility of the soil. During the six winter months they constitute the chief food of most of the inhabitants.

As the department of the Corrèze is rather mountainous, it contains mines of iron, lead, tin, copper, and antimony, sources of mineral water and copper forges. Its principal manufactures are those of fire arms, printed linen and cotton, silk handkerchiefs, mullin, gauze, satin, and poplins, called Stiacciâtre impressi in Indigentes, wax candles, and writing-paper.

The curiousness of this Department are the volcanic rock of Polignac near Brives, an ancient temple of Apollo, a chapel in which there are Roman inscriptions, a colossal head, and many other remains of antiquity, in the environs of Tinmin.

The department of the Corrèze is divided into three districts, Ufild, Tulles, and Brives, 29 cantons and 294 communes. Tulles, Meyzieu, Ufild, Neuvie, Brives, and Uzerche is its principal towns. The extent is 5947 square kilometres, or about 2300 English square miles. There are 34,000 people, less of which are covered with wood. It is inhabited by 245,672 individuals, which give 270 inhabitants for each square mile. The taxes paid by this department in 1803 amounted to 588,554 French livres, which make the average contribution of each individual to the public expenditure amount annually to little better than fix livres a half, or about 53. G. sterling. Herbin's Statistique de la France.

Correze, a town of France, in the department of the Corrèze, and chief place of a canton, in the district of Tulles, situated on a river of the same name, 8 miles N. E. of Tulles. The place contains 1350, and the canton 6170 inhabitants; the territorial extent comprehends 2424 kilometres, and 9 communes.

Corrha, in Ancient Geography, a town of Aâ, in the Greater Armenia, according to Ptolemy.—Allo, a place of Aâ, situated, according to the same geographer, in Persia Propria.

Corragum, a strong town of Macedonia. Livy.

Corriarok, in Geography, a mountain of the Highlands of Scotland, near Fort Augustus, N. W. of Ben Nevis; over which is a military road, in a zig-zag direction. From the foot of this mountain arises the rapid river Spey, and other streams rise to the west, indicating great elevation.

Corrib Lough, a lake of Ireland, in the county of Galway, which is twenty miles long, and lomply from two to five wide, though in the broadest part it is seven. In the middle it is contracted to a shall channel, which is crossed by a ferry at Knock. There are a great number of concealed rocks, which render the navigation of this lake dangerous to those who are not well acquainted with it.

The lake empties itself into the sea by a broad and rocky river on which the town of Galway is situated about three miles from its southern extremity.

There is a fresh water mucke in this lake, which produceth perals, of which there are some very fine specimens. Kent.

Corrice. See Corrackle.

Coridor. See Coridor.

Corrientes, Los, in Geography, a city of South America, in the vicereignty of Buenos Ayres, situated on the eastern banks of the river de la Plata, near its junction with the river Para, about 100 leagues north of Santa Fê. In magnitude and disposition it is inferior to Santa Fê, and has no marks of a city except the name. This city was founded in 1589, and was at first greatly infested by the
the Abipone, so that it became necessary to establish a corps of milita in order to subdue them. It has now a church and three convents; and it has its particular corregidor, as Lieutenant of the governor. S. lit. 27° 32'. W. long. 5° 45'.


"Flowers peduncled; calyxes membranous, and white at the edges." Root annual. Stems numerous, profuse, but little branched, cylindrical, smooth, leathery. Leaves alternate, linear-lanceolate, obtuse, quite, somewhat, silky, smooth, glaucous, attenuated at the base; stipules in pairs, acute, silky, transparent. Flowers small, white, in many-flowered terminal and lateral clusters; petals, as well as the calyx, permanent. 2. C. capenis. Willd. 2. (C. littoralis; Thunb. Prod. 53. "Flowers little; calyxes green." A native of the Cape of Good Hope.

Corrigiola-alpica; Forl. See Illecebrum Aristicum.

CORRIRA, in Ornithology. Authors define under this title an ambiguous kind of bird, supposed to be of the Grallse order, but which appears to be by no means clearly determined. In the "Gmelinian System," it is placed as a genus between the tauralus and teocapax, or ibis and foipe tribe. Dr. Latham arranges it among the palmipides, between the recurvirostra (avoet), and the phoenicopterus, or flamingo; and in, in this respect, followed by Vieille, and other late French writers. The Gmelinian character of the genus corrira, confin'd in having the bill short, straight, and toothless, thiples larger than the body, feet four-toed, palmated, and the toes very short. In Dr. Latham's Synopsis, the genus is described as having the bill short and straight, legs long, thighs short, feet palmated, and furnished with a back toe. In the Ind. Orn. of the fame writer, it is added, that the thighs are longer than the body, and the back toe not connected. Vieille fays, the heak is short, straight, and without teeth; the legs short, thighs long, feet palmated and entire, the three exterior toes connected by a membrane, and the pollicer one isolated.

This remarkable bird is fully described by Aldrovandus, who seems to be the only one acquainted with it; for Ray and Willughby, Briston, Gmelin, Latham, and Vieille have taken their description of it entirely from Aldrovandus. This writer calls it trochilus vulgo corrica; it is also the corrica of Briston, caprina italicis, Gmelin, Italian courier of Latham, and coureur of the French. The names are synonymous, and allude to its swiftness in running. The bird is said to be an inhabitant of Italy; its size rather less than the avoet, and with the legs, not so long in proportion; the bill short, straight, and yellow, with the tip black: the tridies of two colours, first white, surrounded with cheffu; the head, and all the upper part of the body and wings frugacious, the under parts white; the two middle tail feathers white tipped with black, the others supposed to be black. We have been minute in the description of this bird, as it is the only species of its genus known.

CORRIVAL, a relative term, signifying, originally, a person, who derived water from the same source, or spring, with another; by means of some common canal, which carried it to both their hands; and which proved the occasion of frequent disputes. Hence the word came to be used for those who have the same pretensions; whether to glory, to love, or the like; but use has abridged the word; and we now both write and pronounce, rival.

CORROBORANT, or CORROBORATIVE. Medicines, are such as tend to augment the strength of the body. These are chiefly vegetable bitters, and metallic salts and oxides. In the language of the Materia Medica, they are more commonly denominated Tonics, which see.

CORROCORRO, in Navigation, a vessel fitted with out-riggers, having an high arched stem and stern, like the points of an half-moon. These vessels are chiefly used by the inhabitants of the Molucca islands, and the Dutch have fleets of them at Amboyna, which they employ as guarda-costas. They have them from a very small size to above ten tons burthen. On the crows pieces, which support the out-riggers, are often put fore and after planks, on which the people sit and paddle, besides tbeo who fit in the vessel on each gunwale. In smooth water they are paddled by many persons in different ranks or rows, and are made to move with great speed. They are feared with two commodities (or broad paddles) and not with a rudder. When they are high out of the water, oars are used; but on the out-riggers they always use paddles. A small corrocorro, without out-riggers, is called ombry.

CORRODENTIA, or CORROSIVA, in Surgery, corrosives, or corroding medicines. See CAUSTIC and CAUSTERY.

CORROSION, the act of corroding, or gnawing away, by little and little, the continuity of the parts of bodies.

Corrosion is used in Chemistry, Medicine, and Natural History; where it stands for a particular species of diffloation, by an acid, or saline menstruum. Corrosion is performed either by immersion or cementation, sprinkling, trituration, or mere contact with a proper menstruum. CORROSIVE sublimate of mercury. See MERCURY.

CORRUDA, in Botany, prior; Cluf. See Asparagus acutifolius.

Corrua alta; Cluf. See Asparagus alpifolius.

Corrua tertia; Cluf. See Asparagus olibus.

Corrua africana; Rau. Sup. See Asparagus capensis.

CORRUGATOR, or Corrugens supercilii in Anatomy, a muscle arising from the great canthus of the orbit of the eye, and terminating in the skin about the middle of the eye-brows. See EYE.

Its name declares its use; being formed of cor, together, and vaga, wrinkle.

Some reckon this muscle only a prolongation of the frontals.

CORRUGATOR coster, or musculus frontalis ventr. This muscle arises fromly from the process of the os frontis, next to the inner or great angle of the orbit, above the joining of the os naso, and superior process of the os maxillare with this bone; from thence running obliquely outward and upward, it is inserted in the fleshly part of the orbic-2. fentalis; some of its fibres passing through into the skin, a little higher than the middle region of the eyebrows.
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Its use is to smooth the skin of the forehead, by pulling it down after the action of the occipit-frontalis; and when it acts more forcibly, it serves to wrinkle the skin of the front between the supercilia; as it happens when we frown, or knit the brows.

CORRUGENT MUSCLE, the same as corrugator supercilii.

CORRUPIBLE. See Incorruptible.

CORRUPTIBLE, see Incorruptible.

CORRUPTIBLE; a term which refers to the Monophyletes in Egypt about the year 510, under their chief, Severus, the pretended patriarch of Alexandria.

Their distinguishing doctrine, whence they derived their name, was, that the body of Jesus Christ was corruptible, i.e. subject to the affections and changes with which human nature is generally attended;—that the fathers had owned it; and that to deny it, was to deny the truth of our Saviour's passion.

On the other hand, Julian, bishop of Halicarnassus, another Eutychian, a refugee, as well as Severus, in Alexandria, maintained that the divine nature had so insinuated itself into the body of Christ, from the very moment of the Virgin's conception, that the body of our Lord changed its nature, and became incorruptible. His followers alleged that to say the body of Christ was corruptible, was to make a distinction between Jesus Christ and the Word, and by consequence to make two natures in Jesus Christ.

The people of Alexandria were divided between the two opinions; and the partisans of Severus were called corruptible, q. d. worshippers of something corruptible; sometimes they were denounced corruptible; Phthishartoenu, Krifhnotae, and Creaticus: and the adherents of Julian Aphiartodoctra, Doctra, incorruptible, or plantisfla. The clergy and secular powers favoured the first; the monks and the people the latter.

Xenais of Hierapolis struck out an hypotyphex, which seemed equally remote from those of both of the contending parties: for he maintained, that Christ had, indeed, truly suffered the various sensations to which humanity is exposed; but that he suffered them not in his nature, but by a subservient act of his will.

CORRUPTION, the extinction of any thing; or the act whereby it ceases to be what it was.

It is an axiom in philosophy, that the corruption of one thing is the generation of another.

Corruption differs from generation, as two contraries differ from each other.

It differs from alteration as a less from a greater, or a part from the whole; a thing being said to be altered, when it is not so far changed but it may be known, and still keep its old name; both which it loses by corruption.

But, as in generation, no matter is produced that did not before exist; so in corruption, nothing is lost, but that particular modification which constituted its form, and made it to be of such a species.

Corruption of blood, in Law, an infection accruing to a man's flate, attained of felony, or treason, and to his issue: So that an attainted person can neither inherit lands or other hereditaments from his ancestors, nor retain those he is already in possession of, nor transmit them by descent to any heir: but the same shall escheat to the lord of the fee, subject to the king's superior right of forfeiture; and the person attainted shall also obstruct all defeants to his polity, whenever they are obliged to derive a title through him to a remote ancestor. Moreover, if he were noble, or a gentleman, he, and all his posterity, are thereby ignoble and degraded. Nevertheless, the king's pardon cleanses the corruption of blood in those children born after the pardon, not in those born before it; these latter continuing still incapable of inheriting the land of their father, purchased before the time of the pardon.

This corruption of blood cannot be absolutely removed but by authority of parliament. The king may excuse the public punishment of an offender; but cannot abolish the private right, which has accrued or may accrue to individuals as a consequence of the criminal's attainder. He may remit a forfeiture, in which the interest of the crown is alone concerned; but he cannot wipe away the corruption of blood; for therein a third person has an interest, the lord who claims by escheat.

If therefore a man hath a son, and is attainted, and afterwards pardoned by the king; this son can never inherit to his father, or father's ancestors; because his paternal blood, being once thoroughly corrupted by his father's attainder, must continue so; but if the son had been born after the pardon, he might inherit; because by the pardon the father is made a new man, and may convey new inheritable blood to his after-born children. (Co. Litt. 392.)

Upon the whole it appears, that a person attainted is neither allowed to retain his former estate, nor to inherit any future one, nor to transmit any inheritance to his issue, either immediately from himself, or immediately through himself, from any remote ancestor; for his inheritable blood, which is necessary either to hold, to take, or to transmit any feudal property, is blotted out, corrupted, and extinguished for ever, the consequence of which is, that cates, thus impeled in their descent, reflect back and escheat to the lord. By reason of the peculiar hardship attending this corruption of blood, arising from feudal principles, it is declared in most (if not all) of the new colonies created by parliament since the reign of Henry VIII., that they shall not extend to any corruption of blood: and by the statute 7 Ann. c. 21, (the operation of which is postponed by the statute 17 Geo. II. c. 390) it is enacted that, after the death of the late pretender, and his sons, no attainder for treason shall extend to the disinheritance of any heir, nor the prejudice of any person, other than the offender himself; which provisions have indeed carried the remedy farther than was required by the hardship above complained of; which is only the future obstruction of defecants, where the pedigree happens to be deduced through the blood of an attainted ancestor. Blackft. Com. Book ii. See Attainder and Escheat.

CORSA, in Architecture, the fame with Plut land.

CORSA, or CORSES, in Ancient Geography, a town of Boeotia, situated on the top of a mountain above the Cynites, About half a stadia below this town was a sacred wood, in the midst of which was to be seen a small statue of Mercury. Pausanias, L ix.

CORSAIR, in Naval History, a pirate, or privateer, who scours the seas, especially the Mediterranean, with a vessel armed for war, without commission from any prince, or power; to plunder merchant vessels.

The word comes from the Italian corsaires, of corsa, or a course, by reason of their courses, or excursions.

The name is commonly given to the piratical cruisers of Barbary, who had their rise about the beginning of the sixteenth century, and who frequently plunder the merchant-ships of countries, with which they are even at peace. A corsair differs from the commander of a privateer in this respect, that he traverses the seas in an arm of vessel without any commission, and for the express purpose of seizing and robbery merchant-ships, whereas the captain of a privateer acts under a commission, and only attacks the vessels of the enemy who are at war with the prince or states from whom...
he has his commodiion. A corsair or pirate pays no regard to the laws of war or peace, and when taken may of course be hanged without ceremony. But people belonging to privateers are guided by those laws, and when taken are regarded and treated as prisoners. For an account of the rise and progress of these pirates see Barbadossa and Barbary.

The practical deprivations of the Illyrians under their queen Tenta, first forced the Romans to visit Illyria and Greece. And the Goths, who are described and represented by Polybus as the corsairs or pirates of Greece, contributed greatly to the subjugation of the Romans.

CORSENO, in Geography, a town of Naples, in the province of Otranto, 3 miles E. of Alefano.

CORSE, a town of France, in the department of the Marne and Loire, 7 miles N. E. of Angers.

Corse, in Ancient Geography, an island of the Mediterranean sea, on the coast of Ionia, and near the isle of Samos. It is called Corsia by Strabo and Corfica by Pliny.

Corselet, a little cuirass, according to some; and according to others, a coat or cover for the whole trunk, anciently worn by the pikemen, commonly placed in the front and flanks of the battle, for the better resistance of the enemies assaults, and the Homer guard of the soldiers placed behind, or within them. Vaugelas observes, that the infantry were anciently armed with corslets.

Corseondens, in Biblical History, a name given by Erasmus to a M. S. which he used in the second edition of his Greek Testament, as it belonged to the Collegium Corsens. cons in Quorum; containing the whole New Testament, the book of Revelation excepted, and supposed to have been written in the 1st century. It is noted 3 in the 1st, 2d, and 3d parts of Weelkin's New Testament. This copy was collated by Walker, whose extracts were inserted in Weiiekin's collection. At that time it was in the library of a Dominican convent at Bruges. It is at present in the imperial library at Vienna, whither it was brought from that of prince Eugene.

Corsepresent, in Ancient Authors, denotes a mortuary. The word is formed of the French, corps pre-sent; and the reason of the denomination is probably this: that where a mortuary, after a man's death, became due, it was offered, or presented to the priest, and carried along with the corps, when it came to be buried; and this term denotes that it was once a voluntary donation. See Mortuary.

Corseul, in Geography, a town of France, in the department of the North Coasts, and district of Dinan; two leagues W. N. W. of Dinan.

Corsham, or Cosham, a small town of Wiltshire, in England, is situated in a flat and dry part of the country. It was during the Anglo-Saxon dynasty, a place of fame, as Camden observes, that here was anciently a "royal vill of king Ethelred," and it was "famous for the retirement of the card of Cornwall." There is a handsome modern market house, which was erected at the expense of the late Paul Methuen. licq. in the year 1784. The church is a large ancient building, with a steeple, and on the south side is a chapel or chantry, raised by the Hungerfords, whose family at one period possessed this lordship. The vicar of Cosham presided very peculiar privileges, having episcopal jurisdiction over the whole parish; and the bailiff of the manor always exercises the offices of sheriff and coroner over the lordship. The town contains chiefly of one long street, and the houses, many of which are very respectable, are all built of free-stone. This town gave birth to Sir Richard Blackmore, a voluminous writer of physical, theological, and poetical works. (See Blackmore.) contiguous to the town is (Corisham-houfe,) the elegant seat of Paul Cobb Methuen, esq. The mansion is a large handsome building, and several of its apartments are filled with pictures by the most eminent masters. Being only nine miles from Bath, this celebrated collection is much visited, and the proprietor has liberally appropriated Tuesdays and Fridays to show the whole to strangers. For an account of these and the house see Ancient History, an Account of Corsia, 1866, &c. Beauties of Wiltshire, vol. ii. p. 211.

Corsel, in Ancient Geography, a people who inhabited the northern part of the island of Sardina. Paulinians and Prolemyn say, that they were a colony from the isle of Corse or Conis.

Corsia, Niccolo, in Biography, a Genoese painter of considerable merit, who flourished in 1523. In the monastic of the monks of mount Oliveto at the village of Quarto, three miles from Genoa, were several of his frescoes, which evinced severity of invention, a just idea of expression, and skill in the management of colours; they were not however exempt from that dryness of style which characterizes the works of the early painters. Some of these stories, particularly one relative to S. Benedicto, still remain. Strutt informs us that an engraving of the portrait of Parmigiano is attributed to this artist. The fact is not probable. Supran, Luzzi, Storici, Pitt.

Coris, Marc Antonio, an engraver, who flourished in 1763, and who executed several of the plates for the Museo Florentino, besides many other prints after Cypriani, J. Zocchi, and others. Heinecken, Strutt.

Corsiara, in Geography, a town of Parma, in the province of Parthum; 105 miles S. W. of Scharis.

Corisca, or the Isle of Corf, called by the Greeks Kupis, Corpus, in Ancient Geography, an island of the Mediterranean, situated to the north of the island called by the ancients Sardina. The first name, according to Servius, was Thyrreus. According to Seneca, the Greeks, who migrated from Phocsea in Asia, founded Marseille in Gaul, and established themselves in the isle of Corse. When they left it, the Ligurians and Hiphoni occupied it. In the time of the Romans, two colonies were conducted here: one by Marcus, and another by Sylvia. The inhabitants were called Corfiz. In the middle of the island are mountains, and among these was the ancient "Mons Attius." The principal promontories, to the north, were "Sacrum Promontorium," to the east, "Vagum Promontorium," and "Graumum Promontorium," to the south, "Marian Promontorium," to the west, "Rhium Promontorium," "Vitubalum Promontorium," and "Actium Promontorium." The chief ports were "Cavoni Portus," and "Syracusianus Portus," to the east; and "Tithania Portus," to the west. The principal towns were, on the east side, "Manninorum Oupium," "Marina," and "Aletrie," and on the west side, "Maridea," and "Urvinium," and to the north, "Canalata." Paisalins 33 towns to this island; but he probably included all the places that were inhabited. The Roman colonies were "Mariana," and "Alecia." The island was one of the isles into which the emperors sent their exiles. Of this number was Seneus, the philosopher, who, being accused of adultery under the reign of Claudius, was banished hither by that emperor. See the next article.

Corsica, the Island of, in Geography, situated in the Mediterranean sea, between the 41st and 43rd degree of N.
CORSICA.

N. latitude, and the 8th and 10th degree of E. longitude, was probably first peopled by the inhabitants of the opposite coast of Italy. It was first successively conquered by the Carthaginians, Romans, Vandals, Goths, Lombards, and Saracens. About the year of our S.R. 725, the French first entered Corsica under Charles Martel; and the family of the Carolingians established themselves as sovereigns in the island, about the end of the eighth century. But their family divisions created troubles, and were followed by a state of anarchy, which was at its utmost height in the beginning of the eleventh century. The popes interfered. To restore peace, they declared themselves Sovereigns of the island; and Gregory VII. excommunicated the Genoese as usurpers of ecclesiastical property, for having taken poss.ion of Corsica. In 1071, Urban II. sold Corsica to the Pisans. Genoa disputed this sale. Innocent II. divided the island into two rival republics. Not being able to agree with the Genoese, the Pisans ceded their part again to pope Urban IV.; and Boniface VIII., thinking that a part carried with it the rest, made a prefect of the whole island to the king of Aragon, from whom it returned under the yoke of Genoa.

The first known assembly of the Corsicans, as a national body, was held in the year 1559, to take into consideration the evils which they suffered, both from the incursions of foreigneers, and from disputes with each other for the conquest of their country, and from the enormity of their tribute, which in certain districts had assumed the title and despotic authority of kings. The Genoese, who were then at the summit of their power, possessed a great part of the island. By the advice of the brave Sambucro, and to free themselves at once of the Pisans, the Arragonese, and of the petty tyrants by whom they were oppressed, the Corsicans claimed the assistance of the Genoese, and associated them in the sovereignty of the whole island. But the happiness produced by this semi-national administration lasted only a few years. Tired of the Genoese yoke, the Corsican chiefs assembled privately in 1582, and chose as their head (p. 4) de la Rocca, under whose command they took several of the Genoese garrisons; but in the height of his triumphs, Rocca was killed in an action, and the Corsicans again submitted to Genoa. They participated for a long time in the fate of this republic; and with it belonged formerly to the French, sometimes to the Mancie, and sometimes to the Neapolitans. At last, they gave themselves up to the lords of Piombino, who, at the end of the fifteenth century, sold Corsica to the Bank of St. George. This occasioned new dissensions with the Genoese; but these were soon disregarded. The persons appointed to govern in the name of the Bank, in which the chiefs of the Genoese republic were interested, had recourse to the most oppressive measures; and to subdue the opposition which they encountered, employed fire and sword. Eighteen pieces or parishes were destroyed, and more than a hundred villages reduced to ashes. The governors vied with each other in barbarity. One of them convened a council of the chief men of the island, and, at the end of a grand entertainment, caused them all to be put to death by soldiers appointed for that treacherous purpose. Thus perished the heads of the most illustrious Corsican families. Four thousand nobles fell; and the Genoese gave their elation to the poorest of their countrymen, who were obliged to refuse in the island.

This horrid transaction inflamed every heart with the most violent resentment. The people ran to arms; warriors, formed in foreign service, returned to affill their country; and the French, who were at that time enemies to the Genoese, helped the Corsicans to break their chains. The flames of civil war raged with fury. Neither the Corsicans nor the Genoese gave any quarter; and whoever happened to escape the murderous sword was sold as a slave to the Turkish Corsairs, who hovered round the island. On resigning their conquests, the French obtained for their friends conditions which would have softened their fate, but which were either eluded or openly violated.

Titled with indignation against the unrelenting persecutors of his country, San Pietro d'Oro, a noble Corsican, married to a Genoese lady named Vannina, whom he left at Marselles as a place of safety, made a voyage to Corfantine, to solicit assistance from the Ottoman Porte. The Genoese imagined that if they could get Vannina into their hands, they should be able, with that valuable hostage, to suspend the fury of her husband. They employed traitors, who, informing themselves into her confidence, persuaded her to repair to Genoa, to effect a reconciliation between the Genoese and the republic. She was just on the point of leaving Marselles when San Pietro returned. He considered her as guilty of preferring her country to her husband, and strangled her with her garter. He then carried on an obstinate and bloody war against the Genoese; but fell into an ambush, prepared for him by one of Vannina's brothers, and expired, saying, "I am a barbarian; Vannina is avenged."

Leonardi di Casti Nuova, San Pietro's lieutenant, having unfortunately been taken prisoner, his youngest son, Antonino, by disguising himself in the dress of the fervant girl who used to carry his father's meals, got into his prison, and enabled him to escape. Ulm moved by this act of filial piety, the Genoese caufed the young man to be hanged.

They were bent upon ruling through fear. They considered Corsica merely as a colony destined to enrich their capital. Not a single article was allowed to be exported to any other place than Genoa. In years of scarcity, the island was dripped with the royal fan's famine, whilst their depots filled in abundance. In vain did they attempt to find another market. When Louis XIV. bombarded Genoa, they offered him their island; but he declined their offer, and the unfortunate Corsicans were forecast to continue submissive to their oppressors.

But in the year 1729, a poor peasant, who only wanted one penny to complete his tax, reproached them for their extortion and an energy which made a deep impression on those around him. At the same time, a Corsican folder was condemned to the wooden horse. The Corsicans used a few pecular expressions with regard to this military punishment, which gave occasion to a quarrel; and these feeble spurs produced a confagration which soon set all Corsica in flames. Armed with old muskets, rusty lances, and hatchets, the people forced the military magistrates, where they found more regular weapons. In a short time they formed a disciplined army, commanded by chiefs who knew how to make choice of proper posts; and by their manifestos, acknowledged their determination to expel the Genoese from the island. The latter called Austrian troops to their assistance.

But the Imperial banners did not frighten the Corsicans; neither were they softened by an amenity which the senate of Genoa offered. They decreed, on the contrary, that the first person who proposed the acceptance of the amenity should be put to death. They sent their wives and children, with those enfeebled by age, to the mountains; and swore that they would expose themselves to a thousand deaths, rather than lay down their arms, whatever proposals might be made to them by the Genoese or the Imperialists. At last, however, after a contet of four years, they contented to an agreement, under the guarantee of the emperor.

But
But at the end of two years, the troubles, which had been incompletely allayed, were again revived. The Corsicans renounced their dependence on Genoa, and openly declared themselves sovereigns, under the immediate conception of the most illustrious Virgin Mary, whose image they carried on their colours. They were immediately to defend the island against any reinforcements sent by the enemy, when, in the month of March 1754, a stranger, attired in a Frankish robe, arrived at Aleria, on board of an English ship of 24 guns, and brought with him 10 pieces of cannon, 4000 muskets, 5000 pairs of shoes, a quantity of provisions, and a small supply of money. He was Stephen Theodore, son of Anthony, baron de Neuhoff, defended from one of the most noble houses in the county of Mark in Welfhalia. His son, Frederic, who in the year 1768 published at London "Memoirs of Corsica," swells the fucceur which his father brought to the Corsicans to 14,000 lacks of grain; 6 pieces of brass cannon, twelve pounders; 5000 muskets; bayonets; and other implements of war; 14,000 uniforms; as many pairs of shoes; the same number of hats; and a chisel full of gold, containing 100,000 réis.

After various adventures in different countries of Europe, Neuhoff had got acquainted with the Corsican malcontents who were confined at Genoa, and interested himself in their behalf. He introduced his favourite at Constantinople, chiefly through Rákóczi, a prince of Transylvania, who had been deprived of his principality by the emperor of Germany, and had retired into Turkey. When he arrived, the Corsicans imagined they beheld a protecting deity. Without consulting the dictates of prudence, they conducted him to Corte, amidst the acclamations of the people, and, in a general assembly, proclaimed him king of Corsica and of Caprana, under the name of Theodore the First. The baron then affirmed all the appendages of royalty, coined money, established tribunals; and, being well supported in the moment of enthusiasm, took some fortresses of the enemy, and declared the Genoese haughty from Corsica, under the pain of death, if they should ever again set foot in the island. The Genoese, on their part, set a price on the head of the new monarch. Anquetil judiciously remarks, that this infamous resource is too commonly resorted to by republics, because they are not afraid of reprisals.

The aid which king Theodore had brought was not considerable. He promised his subjects subsidence of much greater importance, and as they showed some impatience at the tardiness of its arrival, the prince himself set in March of the following year, and having reached Corte, he landed in Corsica, where he remained several years in prison for debts, and died soon after his release, in extreme indigence, on the 11th of December 1755.

An accommodation had taken place some time before Theodore's death, between the Corsicans and the Genoese, under the guarantee of France. But when the French withdrew their troops, the islanders again rebelled the Genoese, under the command of a nobleman named Gaffori, who communicated to his countrymen the hatred which he felt for the oppressive of his country. Having laid siege to a fortress, the Genoese made a sortie, and took one of his children, then at the breast. They threatened that, if the father did not cease firing, they would expel the child on the walls; and they were fo cruel as to put their threat into execution. Gaffori being more attached to his country than to his family, continued his fire; but fortunately the child was not hurt, and the Corsican General made himself master of the fortresses, and was soon after treacherously assassinated.

After the death of Gaffori, the general council, presided by Clement Paoli, recalled Pascal Paoli, his brother, from Naples, where he had fought shelter against the Genoese, to whom he had been frequently opposed, and elected him on the 15th July 1755, when he was but 29 years of age, chief of the Republic; in the government of which he was to be assisted by two counsellors of state, and one of the most reputable persons from each district, all of whom were to be changed once a month.

Paoli conducted himself so well, both in the council and the army, that he gave great uneasiness to the Genoese. Their fear induced them to send, in 1761, a solemn deputation to a general assembly convened at Venice, for the purpose of offering peace; but the Corsicans would listen to no proposals, unless they were acknowledged as a free and independent nation. The general enrolled all the inhabitants capable of bearing arms, disciplined his troops, caused money to be coined, and made his administration feared and respected. He drove the Genoese from the open country, and thrust them up in the maritime towns.

In the mean time the Genoese obtained subsistence from France. In 1764, the French general Marboeuf, an officer of considerable talents, landed with six battalions. Paoli now employed caution and political prudence, and listened to proposals for peace; but firmly adhered to the resolution of obtaining freedom and independence for his country. This began to excite in the English nation a wish to have the unfortunate Corsicans; and a young Scotchman, the late Mr. Bowskill, son of Lord Auchinleck, having been induced to visit Corsica about the same time, Paoli did not discontinue the report that he was sent thither on a secret mission. England, however, did not interfere; and Genoa having renounced the sovereignty of the island in favour of the King of France, a French army of 5000 men, under the command of the marquis de Chauvelin, supported by two ships of the line, two frigates, and six armed brigantines, invaded Corsica in 1768. A furious war ensued; in which numbers, military science, money, and discipline, were on one side, and on the other, an almost unarmed multitude, enthusiasm, bravery, and the caufe of liberty. After various successes, an action was fought on the 7th of September 1768, in conjunction of which the French retired to Balia. The marquis de Chauvelin left the army; the command of which was given to Count de Vaux, who, bringing with him considerable reinforcements, effected the evacuation of Corsica in 1769. Paoli, after having defended his country to the last, escaped in an English ship, which took him to Leghorn, from whence he repaired to London. The celebrated ex-general Dumourier, who served in the French army as adjutant-general, pays high compliments to the Corsicans, and their chief, in the memoirs of his own life. See Paoli.

In the year 1792, Paoli returned to Corsica, after having taken the oath of fidelity to the constituent-assembly of France, and was elected mayor of Balia, commander in chief of the national guard, and president of the department. When the execution of Louis XVI. rendered a civil war probable in France, Paoli thought it a favourable opportunity
to effect the deliverance of his country from all foreign yoke. He therefore determined to call in the alliance of England; and invited Lord Hood, who was then at Toulon, and who had recently been foiled in an attempt against Corfica, to invade it anew. An expedition failed from the bay of Hieres on the 24th of January 1795, for the express purpose of driving the French out of the island. The troops, under the command of lieutenant-general Dandas, took the tower of Morfella, Fornelli, and San Fiorenzo; and Balta and Calvi having likewise yielded to the English, a general con- fult was assembled at Corte, in which the union of Corfica with the British empire was unanimously voted. This pro- position having been readily accepted on the part of the En- glish commissioner, Sir Gilbert Elliot, now lord Minto, he was immediately invested with the dignity of vicerey.

But Corfica did not contain an extent equal to those of the British crown. Jambles arose between the English vicerey and General Paoli. The latter returned to England; and before his departure, exhorted his countrymen to remain firm in their allegiance to Great Britain. His exhortation had however little effect upon the Corficans. The splendour of the victories of their countryman Bonaparte in Italy, deter- mined them to return to their allegiance to the French. The English troops evacuated the island, and Corfica has ever since continued a province of the French empire. Anquetil's Summary of Universal History, vol. vii.

Corfica is bounded to the north by the Ligurian sea, and the gulf of Genoa; to the east by the Etrurian sea; to the south by the Strait, which separates it from Sardinia; and to the west by the Mediterranean. It is about 180 kilometres distant from the coast of Antibes, 90 from that of Etru- ria, and 18 from Sardinia. Its greatest length from the most northern part, which is Cape Corfo, to the southernmost, near Bonificacio, is about 170 kilometres. In some places it is 80 kilometres broad, in others 65, and in some much less; its whole extent is about 625 square kilometres. A chain of mountains traverses the island in the form of a crescent, and divides it east and west into two parts, called by the inhabitants Bande di dentro, and Bande di fuori, or Di qua dai monti, and Di là dai monti, on this side, and on that side of the mountains.

The climate of Corfica is mild. The sea-breezes temper the cold which proceeds from the mountains covered with snow, and the wind which blows over them, renders the summer's heat less oppressive. Some of the winter months are not exempted from violent storms. The air in several places is bad, owing to the many stagnated waters and marshes, which, however, are now in a train of being drained. Every where else the air is clear and salubrious. The inhabitants live to a very great age.

Corfica is watered by several rivers, of which the Golo is the most considerable. Like the sea-coasts, they abound in fish of all sorts, particularly eels, pikes, chards, and oysters, great quantities of which are exported to Italy. Beautiful coral is found on the coast opposite to Sardinia, near the centre of the island, and extensive beds of the Corallina and the Isoa, which is principal. Towards the shore are several marshes, some of which, being filled with sea water, yield salt sufficient for the consummation of the island.

The soil of Corfica is fertile even in the mountains. It pro- duces wheat, rye, barley, millet, but no oats. The horses and mules are fed with barley. Agriculture, however, is in a very imperfect state. The implements of husbandry are bad; and the use of manure, which might be had in abund- ance, is scarcely known. In several cantons, Corfica has excellent wine. At Cape Corfo, they make two sorts of white wine; one of which resembles mountain so well, that it is sold in Germany for genuine Malaga, and sent to Leg- horn for the English market, where it also passes for Spanish wine; the other resembles the French muscat wine, called Frontignac. The white wine of Corfica has all the qualities of that of Syraucuse, and that of some villages has the flavour of Tockay. At Velovato and Cumpitoro, they have a wine which resembles Burgundy. There is besides an abundant harvest of dry raisins. The olive tree thrives all over the island, and is one of its greatest riches. It grows thicker and higher than in the southern departments of France. The oil is good; but might still be better, if it were more carefully prepared. It is to the father of the extraordi- nary man who is at the head of the French government, that the Corficans are indebted for the introduction of the olive tree in their country. Lemon, pomegranate, orange, almond, not sufficient paiture. The cows give but little milk, and the oxen are lean. Grazing is completely neglected, or rather not understood. The produce of the dairy is not much in quantity, Oil supplies the place of butter as in all hot countries. Some cantons however are noted for good cheese. The flocks of sheep are numerous. As they have excellent pasture on the mountains the mutton is exquisite, and makes amends for the badness of the beef. The sheep in general are black and tawny. The coarseness of their wool is attributed to their being of a mongrel breed, but some of the inhabitants pretend that it proceeds from the nature of the pasture, since sheep which have but a coarse fleece in one farm, will yield a finer wool if transferred to another narm whose pasture is superior. It is nothing uncom- mon to see sheep with more than two horns. Some have as many as six. The maffulli is a kind of wild ram covered with hair instead of wool. Game is plentiful: there are neither wolves nor rabbits, and very few venomous animals.

No country in proportion to its size is richer in mineral productions than Corfica. Lead is found at Braszaga; copper at Verde; iron at Corte, Cape Corfo, and near Farinolone; antimony at Erza; silver at Caccia, Farinole, Galeria, and near San Fiorenzo, where the mine yields nearly 125 livres per cent. or 50 kilogrammes. There are quarries of fine ferpentine stone, called vert de corfe. Cor- fican green, and at Hospitale, near Porto Vecchio, quarries of beautiful black porphyry spotted with pink. Corfica has also alum, granite, jadeis, tale, albeis, and falt- petre.

The island of Corfica is not very populous. The inter- dental wars by which it has been ravaged for ages have great-
ly contributed to its depopulation. In Pliny's time there were no less than thirty-three large towns; their number now is reduced to nine. In 1740 Corsica contained 133 parishes, 437 villages, 2,958 houses, and 112,590 inhabitants. In 1750 their number had risen to 139,000. In 1787 Mr. Necker estimated the population of Corsica at 124,500 individuals; and by the last returns of 1821 it was found to contain 165,813 inhabitants. It is the twenty-third military division of France. For its civil administration it is divided into two departments, the Colos, which has Bastia for its chief place, and the Littore, of which Ajaccio is the principal town. The two departments are subdivided into six districts, 60 cantons, and 391 communes.

Industry and arts have made but little progress in Corsica. Manufacturers are in their infancy. Their woollen and linen cloth is of the coarsest kind. The leather of which they make their shoes is not tanned, but hardened in the air, and the little they do tan for other purposes receives a greenish hue from the dried wild bay leaves which they use, though they are no strangers to the true processes of tanning, and export great quantities of bark to Italy.

The trade of Corsica is inconsiderable. Besides the articles of home consumption and only chiefly in the sale of the coral which is found on its coasts. Both from its situation and from its product, Corsica might enjoy a much more extensive commerce. Its coast offers almost everywhere a good anchorage for vessels of a light draught; it has numerous ports; to the north Centuri; to the west San Fiorenzo, Isola Ruffa, Calvi, Ajaccio; to the south Bonifacio; and to the east Bastia, Macinaio, and Porto Vecchio, which is one of the belt harbours in Europe; and the vicinity of the islands of Capraja, Gorgonna, and Elba, affords a safe retreat to small vessels that are overtaken by a storm.

The Corsicans are well made, but thin and swarthy. They are the descendants of so many nations that it is difficult to determine their character. Strabo calls them bruti, brutal, fluid, and indolent. Piny praises them as just, generous, valiant, and humane. Some modern travellers describe them as turbulent and ferocious, others as complaisant and hospitable, and relish only when they are opiated. It appears however from all accounts, that besides ignorance, incidence, want of probity and confidence, and superstition, the vice to which the Corsicans are most prone is revenge. They used to carry their vindictive spirit to such an excess, that those who conceived their honour injured, would suffer their heads to grow till they had revenged the affront. These beads were called bande di vendetta. And even now the proverb Il Corso non pardona mai se vive in morte, and the generally received expression di una inimitatia di fangue are sufficient evidence that their enmities are still propagated from one generation to the other. But at the same time it cannot be denied that the Corsicans are sober, brave, intrepid, active, sagacious, and hospitable. It is not unusual to hear those who guard flocks of sheep in the mountains sing stanzas of Taffi's poems, but in a less brilliant manner than the Italian shepherds. Memoirs of Corsica. Herbin's Statistique de la France.

CORFINI, Edward, in Biography, was born at Fanano, in Italy, in the year 1702, and applied himself early in life to the study of philosophy. Scarcely had he attained to manhood when he made himself known by a work in six volumes, entitled "Philosophical and Mathematical Institutions." His next works were treatises on practical and theoretical geometry, intended as elementary works for the young. From the publication of these works it seems to have applied himself with much ardour to the study of the ancient classics, particularly to the Greek writers. In connection with which he published at different periods, in four volumes, a work entitled "Ephes Artice in quibus Archontum Athenienium Series, Philosophorum aliorumque illustrium Viros. Atque atque praecipua Articis Historiae capsas descripturam." He was appointed professor of metaphysics in the university of Pisa in 1746; and in the following year he published "Differtiones on the Sacred Games of the Greeks," in which he has recorded a list of the victors in the athletic contests. After this he found a work of Corsini on Greek inscriptions, and another entitled "A Course of Metaphysics," intended no doubt for his pupils. He had long assumed the ecclesiastical character, and in 1746 was made general of his order. His time was now much occupied by the duties of his office, but his leisure hours he devoted to literary pursuits, especially those connected with ancient times. He died in the year 1765, at an age of just completing the fourth volume of "A History of the University of Pisa," of which he had been appointed historiographer. Moreri.

CORSINI, Pietro, in Biography, a native of Florence, where he distinguished himself towards the close of the fourteenth century. Having received the diploma of doctor of law, he was shortly after appointed auditor of the sacred palace, and raised to the episcopal dignity. In 1561 he was sent by pope Urban V. to legate to Germany, and in 1570 he was created cardinal by the same pope. After the death of Urban, Corsini embraced the interests of Clement VII. in opposition to Urban VI., and joined the court of Clement at Avignon, where he died in the year 1495. As an author he was not much celebrated, but he wrote the lives of some of the popes, which are noticed by ecclesiastical writers. Moreri.

CORSINI. See Bankers, in the Court of Rome, and Caursini.

CORSINED BREAD, panis conjuratus, curbed bread, or morzel of excration, a superstitious manner of trial, used among our Saxons, having just completed the first volume of "A History of the University of Pisa," of which he had been appointed historiographer. Moreri.)

CORSINO, in Commerce, a duty paid in the Caracas, and, in some other parts of Spanish America, on entering and clearing.
clearing from the sea-ports. Its produce is applied to the support of vessels employed in preventing contraband trade. It ordinarily yields 150,000 hard dollars per annum.

CORSOER, or CORSOER, in Latin Cruscora, a small town of Denmark, situated in Zealand, on a point of land in the Great Belt, opposite the town of Nyborg in Jutland. This is the usual passage across the Great Belt; the distance between the two towns is about twenty English miles.

Cortfoer is a little town, and carries on a considerable trade, but its harbour is only fitted for vessels which do not draw above nine feet water. Near the town is an ancient castle with a ditch and rampart, with a few small cannon, more for form than service. It contains the commander's house, formerly a royal palace, and a granary, and is garnished by a few invalids. Cortfoer is about 52 English miles W. of Copenhagen, lat. 55° 22', E. long. 11° 15'.

CORSODES, in Natural History, a name given by some authors to a species of agate of a greyish white, full of slender veins, of a clearer white, resembling hairs. It is one of the German agates, and sometimes seen among our jewels, cut into tops of snuff-boxes, and other toys, but is not much esteemed.

CORSOTE, SURA, in Ancient Geography, a town or fortress of Aisa; M. Meopotamia, on the banks of the Mafca, according to Xenophon. M. d'Aville places it on the left of the Euphrates, at the confluence of the Mafca.

CORTHORIITUM, a town of Albion, placed in the first route of Antonine, between Bremenium and Riechelter and Windomora, or Ebchelter, now Corbridge, twenty miles from the former.

CORSURA, an island of Africa, placed by Strabo in the gulf of Carthage.

CORT, CORRELIUS, in Biography, a designer and engraver of great celebrity, was born at Hoorna, in Holland, in the year 1536. He evinced an early inclination for engraving, and is conjectured to have been educated at Antwerp, in the school of Jerom Cock, an artist of considerable merit, and a great publisher of prints. With this artist Cort continued several years, during which time he executed an incredible number of small plates from pictures of the Flemish and German masters, which, however, generally bear only the name of the publisher. His reputation, notwithstanding, was already established. For we find, that upon his arrival at Venice, in his way to Rome, he received a flattering invitation from Titian, that he was induced to make a long sojourn in the house of that great artist, and to engrave many of his finest pictures. After this he took up his residence at Rome, where he executed a prodigious number of admirable plates from the works of Muziano, the Zacardi, and others. Here he established a school of engraving; and it is a sufficient eulogy to say, that he numbered the celebrated Agostino Carracci amongst his disciples. He died at Rome 1578. M. Heineken has given a complete catalogue of the works of this skilful artist; we shall only enumerate the following, which are fine specimens of his abilities: "The Martyrdom of St. Lawrence," 1571, an upright plate, in folio, from Titian; "Diana discovering the incontinence of Calisto," from the same painter, 1566, upright in fol.; six admirable large upright-landscapes, from Muziano, in which are introduced St. John the Baptist, Mary Magdalen, St. Jerom, St. Onofrio, St. Hubert, and St. Francis receiving the Stigmata. Huber.

CORTACHA, or CORGATA, in Ancient Geography, a town of India, on the other side of the Ganges. Ptolemy.

CORTAN, in Commerce, a Spanish measur in Catalonia, 12 of which make a quartera, which is two bushels Vol. X.

English measure. Sixteen quarters make a large of wine or brandy, or about 50 gallons English, being equal to 12 arrobas.

CORTÉCE, CEARE, in Biography, a Genoese painter of some eminence, was born in the year 1550. After having received the rudiments of his art from his father Valere, a scholar of Titian, and an excellent painter of portraits, but ruined in the pursuit of the philosopher's stone, he was placed under the tuition of Luca Cambiasio; and though he never equaled that great artist, he is considered one of his chief disciples. He was much employed in cabinet pictures and portraits, and sometimes executed larger works. In the church of St. Piero, at Genoa, is an altar-piece of this master, representing the Tulerat Saint at the font of the Madonna, with surrounding angels, which is delicately designed, and well coloured. The latter part of his life was miserably spent in the inquisition, where he died about 1615. He had a son named Davide Corte, who was an excellent copyist, and who died of the plague in the year 1657.

Corti, Storia Pictorica.

Corte, in Geography, a town of France, in the island of Corico, in the department of the Golo, is the chief place of a district, which, upon an extent of 1,445 square kilometres, contains a population of 35,342 individuals. Corte itself counts 2,044 inhabitants. It is built on an eminence, and has a subprefecture and a court of justice. The soil of the district is uncommonly fertile. It produces wheat, wine, and olives. There is also much fruit made.

Corte is almost in the centre of the island, 50 miles S. E. of Calvi; 33 S. W. of Bastia. N. lat. 42° 12'.

Corte Maggiora, a town of Italy, in the duchy of Piacenza, six miles W. of Piacenza.

CORTEAU, an engine of war among the ancients, of which, however, there is no good account on record.

Cortegana, in Geography, a town of Spain, in the province of Andalufsia; 28 miles N. W. of Seville.

Cortellazzo, a small island near the S. E. coast of the island of Sardinia, on the N. side of the gulf of Cagliari.

Cortemiglia, a small town of France, in the department of the Tanaro, which was formerly part of Piedmont, in Italy, and belonged to the king of Sardinia. Cortemiglia has 1,900 inhabitants, and is the chief place of a canton, composed of 19 communes, and containing 13,504 inhabitants.

Cortes, fernando, in Biography, an enterprising and successful Spanich commander in the subjugation of Mexico, was born at Medellin, a small town of Ébremedu-ra, in the year 1485, and defended of a noble family of very moderate fortune. His parents, desirous of him for the profecution of the law, sent him to the university of Salamanca; but, being well fitted to his ardent and restless genius, he soon left the university, and returning to his native town, devoted himself to active sports and martial exercises. His temper being impetuous and overbearing, and his habits disordered, his father was glad to gratify his inclination by sending him abroad as an adventurer in arms. The scene to which his views were directed was America; and, in the year 1504, he landed at St. Domingo, where, under the patronage of Ovando, the governor of Hispaniola, who was his kinsman, he was soon advanced to several honourable and lucrative stations. His ambition, however, was not satisfied; and therefore, in 1511, he obtained permission to accompany Diego Velasquez in an expedition to Cuba. In this service he distinguished himself so much, that he received an ample conciliation of lands and of Indians, the usual remuneration bestowed upon adventurers in the
CORTES.

New World. Cortes, naturally ardent and active, displayed other qualities, which adapted him for difficult and hazardous enterprises. With calm prudence in concerting his schemes, and persevering vigour in executing them, he combined the art of gaining the confidence and governing the minds of those with whom he was concerned. To their superior accomplishments, he added others of an inferior kind, that are fitted to elude the vulgur, and command their respect: a graceful person, an engaging aspect, regular address in martial exercises, and a robust constitution, capable of enduring any fatigue. Thus qualified, Cortes was selected as the most proper person for conducting the projected invasion of Mexico; and, as soon as he received his commission, he lost no time in making every necessary preparation for the enterprise. For this purpose he expended all his own funds, together with the additional money which he was able to raise, amounting in the whole value to about 1500£ sterling, in purchasing military stores and provisions, and in supplying the wants of those officers who were unable to equip themselves in a manner suitable to their rank. Cortes, however, at the commencement of his adventure, found, that in the suspicious and jealous temper of Velázquez, he had difficulties with which to contend, that required a very high degree of prudence and resolution, and these difficulties were enhanced in the progress of his undertaking. On the 18th of November 1518, he set sail from St. Jago de Cuba; but he had no sooner arrived at Trinidad, a small settlement on the same side of the island, before Velázquez made an attempt to deprive him of his commission. Cortes, however, had so far engaged the esteem and confidence of his troops, that partly by soothing, and partly by intimidating Verdugo, a magistrate at Trinidad, to whom Velázquez had sent his instructions, he was allowed to depart without molestation from Trinidad. Cortes failed for the Havannah in order to raise more soldiers, and to complete the victualling of his fleet. During his unavoidably stay in this place, Velázquez sent orders for arresting him, and for delaying the departure of the armed vessel. Cortes, forewarned of the danger, had time to take precautions for his own safety. He announced to his troops the hostile intentions of Velázquez, and found that both his officers and soldiers who were intent on an expedition which flirted them with the hopes of glory and wealth, were determined to persevere; and accordingly they were unanimous in their intentions that he would not abandon the important station to which he was so well intituled; offering, at the same time, to feal the last drop of their blood in supporting his authority. Cortes did not hesitate in complying with their wishes; swore that he would never desert them, and promised to conduct them without further delay, to that rich country, which had been so long the object of their thoughts and wishes. Everything was now ready for their departure. The fleet consisted of eleven vessels, having on board 617 men, of whom 508 belonged to the land service, and 109 were seamen or artificers. With this flander and ill furnished train, Cortes set sail from Cuba, February 10, 1519, to make war upon a monarch, whose dominions were more extensive than all the kingdoms subject to the Spanish crown. Of religious enthusiasm, as well as avarice, these adventurers availed themselves on the present occasion; and therefore they displayed in their standards a large cross, bearing this inscription, "Let us follow the cross, for under this sign we shall conquer." Cortes failed towards the island of Cozumel; and there redeemed Jerôme de Aguilar, a Spaniard, who had been eight years a prisoner among the Indians, and who proved extremely useful as an interpreter. From Cozumel he proceeded to the river of Tabaco, where falling to conciliate the good-will of the natives, by mild measures, he had recourse to violence; and at length induced them to acknowledge the king of Cañile as their sovereign, and to grant him a supply of provisions, with a present of cotton garments, some gold, and 20 female slaves. Pursuing his course to the westward, he at length landed at St. Juan de Ulua, where he was accosted by a number of persons in a canoe, who approached his ship with signs of peace and amity. One of his female slaves, named Donna Marina, who perfectly understood the Mexican language, served as an interpreter on the occasion. Here he landed his troops, horses, and artillery, and fortified his camp; the natives afflicting him in all his operations. In his first interview with two Mexican officers, who were deputed to inquire what were his intentions in visiting their coast, and to offer him any assistance which he might need for the prosecution of his voyage; Cortes informed them that he came as an ambassador from Don Carlos of Auduria, king of Cañile, the greatest monarch of the East, with propositions of such moment, that he could impart to none but the emperor Montezuma himself; and he therefore required them to conduct him, without loss of time, into the presence of their monarch. Whilst he hesitated in complying with his request, they endeavoured to conciliate his good-will by costly presents, the display of which tended to increase the avidity of the Spaniards, and their eagerness to take possession of a country which abounded with such precious productions. The deputies dissuaded Cortes from visiting the capital; but he with a haughty determined tone insisted on his demand of being admitted to a personal audience of their sovereign. During the interview some Mexican painters were employed in delineating upon white cotton cloths figures of the ships, the horses, the artillery, the soldiers, and whatever else attracted their notice, as figures. These pictures, as Cortes was informed, were to be sent to Montezuma, in order to give him a better idea of the objects now presented to their view than any words could do: and therefore he resolved to make the representation more animated and interesting by exhibiting a spectacle which might give them and their monarch an awful impression of the extraordinary prowess of his followers, and the irresistible force of their arms. The trumpets were ordered to sound an alarm; the troops instantly formed in order of battle; the infantry performed such martial exercises as were best fitted to display the effect of their different weapons; the horses by various evolutions gave a specimen of their agility and strength; and the artillery, pointed towards the thick wood which surrounded their camp, made dreadful havoc among the trees. The Mexicans were amazed, and at the explosion of the cannon many fled, and some fell to the ground; and Cortes found it difficult to compose their minds and preserve their confidence in their own safety. The painters put their fancy on the stretch in inventing figures and characters for representing the extraordinary things which they had seen. These pictures were dispatched to Montezuma, and Cortes sent along with them a present of some European curiosities. Although the capital, in which Montezuma resided, was above 180 miles from St. Juan de Ulua, Cortes's presents were carried thither, and an answer to his demands was received in a few days. As it was such as would be likely to irritate and not to satisfy him, the messengers introduced themselves, followed by a train of 100 Indians, loaded with presents sent by Montezuma. Among these were two large plates of a circular form, one of malleable gold representing the sun, and the other of silver an emblem of the moon, which latter alone was in value about 5000£ sterling. These were accom-
accompanied with various other colly articles, consisting of
golden ornaments and boxes of pearls and precious stones.
When these presents were delivered, Cortes was informed
that Montezuma would not consent that his troops should
approach nearer to his capital, or even allow them to con-
tinue longer in his dominions. The Spanish general
ill-infested on his first demand; and Montezuma, though
haughty, violent, and impatient of constraint in his own
temper, instead of yielding on the Spaniards, whilst they
were encamped on a barren unhealthy coast, without an ally, re-
newed his negociation. In order to account for this indi-
rection and timidity, it is said an opinion prevailed uni-
versally among the Americans, that some dreadful calamity
would befall their country by means of formidable invaders
who should come from regions towards the rising sun. The
superlition and credulity of the Mexicans represented the
Spaniards as the instruments of that fatal revolution which
they dreaded. Hence it ceased to be incredible, that a few
adventurers, like Cortes and his attendants, should alarm
the monarch of a great empire and all his subjects. Instead
of taking effectual measures for expelling these invaders,
Montezuma, after confuting his mind-sets, renewed his in-
junction in more positive terms, requiring them to leave the
country; but this injunction was accompanied with a pretent
of such value, as furnished a fresh inducement to remain there.
The Spaniards perceiving that hostile measures would be
necessary, began to feel uneasiness; and the party of
Velaquez disseminated jealousies and fears. In the mean-
while, Cortes took every measure, by kind attention and a
liberal distribution of Mexican gold, to secure the affection
and attachment of the soldiery. As he perfumed in his de-
mand of an audience on the part of the Mexican sovereign,
the meffinger quitted the camp with looks and gestures
which expressed his surprize and resentment; and soon after
the natives, who brought provisions to the camp, discon-
tinued their visits. Every circumstance indicated the speedy
commencement of hostilities; and dissatisfaction prevailed
more and more in the Spanish camp. Cortes temporized and
seemed to concur in the wishes of those, who were incli-
ned to defer from the enterprise; and accordingly he
issued orders, that the army should be in readiness to re-
mark for Cuba. The disappointed adventurers exclaimed and
threatened, and the whole camp was almost in an open
muttery. In an interview with their commander, they ex-
pressed their allowance at the order which he had issued;
declared their readines to follow him with alacrity through
every danger, in quest of those settlements and treasures
which had been so long held out to their view; and at the
same time, announced their resolution, if he chose to return
to Cuba, to chuse another general, who would conduct
them in that path of glory which he had not spirit to enter.
The experiment succeeded; and Cortes, finding the spirit
that prevailed among his troops, professed his readines to
conduct them, agreeably to their wishes, in the career of
victory, to such independent fortunes as their value merited.
Upon this declaration, <flouts of applause testified the exists
of their joy. Cortes immediately began to execute his de-
ign. Having assembled the principal persons in his army,
he elected, by their suffrages, a council and magistrates, in
whom the government of the new colony should be vested;
framing the new settlement upon the model of a Spanish cor-
poration. All the persons chosen to office were most
firmly devoted to Cortes. Combining the two operative
principles of avarice and enthusiasm, he called his new settle-
ment "Villa Rica de la vera Cruz," i.e. "The rich Town
of the true Cross," When this new council was established,
Cortes, after an artful harangue, laid the commission, which
he had received from Velaquez, upon the table, and, after
killing his truncheon, delivered it to the chief magistrate,
and withdrew. The council, being well prepared for the
measures that were to follow, did not long deliberate: the
resignation of Cortes was accepted, and he was unanimously
elected chief justice of the colony, and captain-general of
the army; and the commission was made out in the king's
name, with most ample powers. The soldiery, with eager
applause, ratified the choice; the air was resounded with the
name of Cortes, and all vowed to shed their blood in support
of his authority. Having imprisoned the leaders of the
mal-contents, who were the adherents of Velaquez, he
secured the confidence of his attendants, by a reasonable
and liberal distribution of Mexican gold among both his
friends and his opponents.

At this time a message was brought to him from Zem-
polla, a considerable town at no great distance, with an
offer of friendship; accompanied with intimations that the
course of this town hated Montezuma, and wished to be
released from the oppression of his yoke. Cortes knew how
to avail himself of this circumstance, and determined to
march to Zempoalla. This town lay in his way to Quiahilaln, about
40 miles to the northward, and which, both on account of
the fertility of the soil and commodiousness of the harbour,
seemed to offer a better situation for a permanent settle-
ment than that where he was encamped. Here he marked out
ground for a town; and aided by the Indians of Zempoalla
and Quiahilan, the place was soon in a state fit for habita-
tion and capable of defence. The caciques of these two
towns, emboldened by their alliance with the Spaniards, in-
fulled the offices who appeared to levy tribute, and to de-
mmand a number of human victims in expiation of their guilt,
for presuming to hold intercourse with strangers, who had
been ordered out of his dominions by the emperor; com-
mitted them to prison, and prepared to sacrifice them to
their gods. From this last danger Cortes rescued them.
The caciques, having thus forfeited the protection of the
emperor, attached themselves to the Spaniards; and their
example was followed by the Totonaces, a fierce people,
who inhabited the mountainous part of the country. Cortes
now wished to have his authority confirmed by the king;
and he therefore proposed that the magistrates of his colony
should address a letter to him, recounting the services they
had already performed, the extent of their jurisdiction,
their absence, the elevation of the country, the industry of
the Indians to which they had contributed, and the
money which had been spent; and the objects which they had
proposed, and the scheme of education and public institu-
tions. This letter was accordingly composed, and the
copies dispatched. The natives were exhorted to follow the
council and settle the colony. On the receipt of this
exchange, the king was pleased to write a letter to the Span-
ishes, confirming the authority of Cortes, and instructing
them to proceed without delay. The Spaniards were
now ready to proceed, and the army was accordingly
marched to Zempoalla, where it arrived in the month of
July, 1519. Cortes was now made supreme governor of
the new colony; and the Spaniards, who had before lived
in the filthy and unhealthy cities of the coast, now found
themselves in a country that was comfortable and
profitable. The Cortes set up his residence, and
the Spaniards, who had before lived in the filthy and unhealthy
of the coast, now found themselves in a country that was comfortable and
profitable. The
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Cortes, however, was precipitated into actions inconsistent with the prudence that distinguished his character; for he commanded his soldiers to overturn the altars and to destroy the idols in the chief temple of Zempoalla, and in their place to erect a crucifix and an image of the Virgin Mary. The people witnessed this deed of sacrilege with astonishment and horror; the priests excided them to arms; and it required the masterly address of Cortes to appease the commotion without bloodshed.

On the 16th of August 1519, Cortes began his march from Zempoalla into the country, with 500 men, 15 horses, and 6 field-pieces. The rest of his troops he left as a garrison in Villa Rica. The cazique of Zempoalla furnished him with provisions, and with 200 Indians, called "Tameques," whose office was to carry burdens, and perform all servile labour. He also supplied Cortes with a body of troops, amounting to 400. When he arrived on the confines of Tlascalca, he found the inhabitants hostile and preparing to oppose their invaders. When the Spaniards entered into the Tlafcalcan territories, they were attacked with great intrepidity, and during 14 days they were exposed to almost uninterrupted assaults; but after three battles and many skirmishes, in imperfect were the military weapons of these people, not one Spaniard was killed in the field. After several unavailing encounters, the fierceons of the Tlafcalcans abated, and they seriously inclined to peace. At length they yielded themselves as vagals to the crown of Castile, and engaged to assist Cortes in all his future operations. Cortes remained 20 days in Tlafcalca, reproving his troops after hard service, andconcerting the plans of his future operations. The Tlafcalcans offered to accompany him in his march to Mexico, with all the forces of the republic, under the command of their most experienced captains. The intemperate zeal of Cortes was very near depriving him of all these benefits. Explaining to the Tlafcalcans some of the chief doctrines of the Christian religion, infusing upon their abandoning their own superstitious, and embracing the faith of their new friends, and mingling masses with arguments, he at length excited the indignation of these people, who had long heard him with singular patience and candour; and they conjured him to desist, lest the gods should avenge on their heads the guilt of having listened to such a proposition. Cortes was proceeding to violence, but was restrained by the interposition of father Bartholomew de Olmedo, chaplain to the expedition. Accordingly he left the Tlafcalcans in the undisturbed exercise of their own rites, requiring only that they should desist from their horrid practice of offering human victims in sacrifice. Cortes, against the remonstrance of the Tlafcalcans, advanced towards Cholula, which had been an independent state, but had lately been subjected to the Mexican empire. Finding the inhabitants to be treacherous, and to be contriving his defilement, while they received him with feeming hospitality and kindnels, he avenged himself without mercy, and slaughtered 6,000 persons. From Cholula Cortes advanced directly towards Mexico, which was only distant 20 leagues; and as he proceeded, the discontent against the Mexican government, that were manifested by the people, encouraged his hopes. In defending from the mountains of Chalco, the vast plain of Mexico opened to their view, and presented the most beautiful prospect on the face of the earth; fertile and cultivated fields, a lake reflecting the sea in extent, encompassed with large towns, and the capital city rising upon an island in the middle, adorned with its temples and its turrets. They were now fully satisfied that the country was rich beyond any conception they had previously formed of it; and they flattered themselves that they should soon obtain an ample recompence for all their services and sufferings. No enemy had yet appeared to oppose their progress; and Cortes was almost at the gates of the capital, before the monarch had determined whether to receive him as a friend, or to oppose him as an enemy. The Spaniards marched forward, however, with great circumspection. At length, as they drew near the city, about 1,600 persons, apparently of distinction, came forth to meet them, adorned with plumes, and clad in mantles of fine cotton. They announced the approach of Montezuma, who advanced in the midst of a great number of attendants, with extraordinary magnificence and pomp, in a chair or litter richly ornamented with gold, and feathers of various colours. Cortes, when he drew near, dismounted and advanced towards him in a respectful posture. Montezuma, at the same time, alighted from his chair, and walked over the cotton cloths which covered the street. After mutual salutations were reciprocally paid and returned, Montezuma conducted Cortes to the quarters allotted for his reception, and politely took his leave.

In this new habitation, surrounded by a stone wall with towers at proper dislances, the first care of Cortes was to take precautions for his security by planting the artillery so as to command the different avenues which led to it, by appointing a large division of his troops, to be always on guard, and by polling centinels at proper distances. In the evening Montezuma returned with the same pomp as in the first interview, and brought rich presents to Cortes and to his officers, and a fo to the private men. In a long conference which ensued, Cortes learned what was the opinion of Montezuma with respect to the Spaniards, and how he supposed Cortes and his followers were the persons whose appearance the Mexican traditions and prophecies taught them to expect, and that he was disposed to receive them as relations of the same blood and parentage. Cortes, in reply, extolled the dignity and power of his sovereign, and announced his intention in sending him into that country, favouring as much as possible the idea which Montezuma had formed concerning the origin of the Spaniards. After some days spent in viewing the city, he resolved in his mind what conduct in his situation it was proper for him to pursue; and all circumstances considered, he determined, as the most expedient measure to verset Montezuma in his palace, and to carry him as a prisoner to the Spanish quarters. When this bold measure was proposed to his officers, the trend displayed many difficulties and objections; but the more intelligent and resolute approved of it; and it was agreed instantly to make the attempt. At his usual hour of visiting Montezuma, Cortes, accompanied by five principal officers, and as many trusty soldiers, went to the palace; and they were followed by 50 chosen men: the rest of the troops were properly distributed and under arms ready to rally forth on the first alarm. Cortes, admitted to an audience, addressed Montezuma in the language of complaint and reproach; and Montezuma attempted to vindicate himself from accusation. The Spanish general thought it necessary, that Montezuma, in order to convince his followers that he entertained no hostile intentions, should leave his own palace, and take up his residence in the Spanish quarters. After much hesitation and remonstrance, and under the influence of apprehensions concerning his own safety, the emperor complied. In the Spanish quarters, to which he was conveyed amidst the murmurs of the people, he was treated with ceremonious respect. After some time Cortes entered his apartment, accompanied by a soldier with a pair of fetters; and addressing him with a firm countenance, told him that as the persons who were about to suffer for attacking the Spaniards near Villa
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Villa Rica, had charged him as the cause of the outrage committed, it was necessary that he likewise should make atonement for that guilt; and he commanded the soldier to clap the fetters on his legs. The monarch sunk under the indignity, and his attendants bathed his feet with their tears. At length Cortez returned from the execution of the persons that had been found guilty with a cheerful countenance, and ordered the fetters to be taken off. This seems to have been, on the part of Cortez, a wanton exercise of power; though it has been vindicated on the ground of policy: as it tended to impress the minds of the Mexicans with a persuasion, that shedding the blood of a Spaniard, of which the persons now executed had been guilty, was the most heinous of all crimes; and nothing appeared better calculated to establish this opinion, than to condemn the first Mexicans who had ventured to commit it to a cruel death, and to oblige their monarch himself to submit to a mortifying indignity, as an expiation for being accersory to their guilt. During the six months of Cortez's abode at Mexico, Montezuma continued in the Spanish quarters with apparent satisfaction and tranquility; and whilst he was thus under the power and, as it were, in the custody of the Spanish general, Cortez enjoyed peculiar advantage for examining the state of the country, and acquainting himself with the disposition of the inhabitants. He also by these means obtained such a command of the Mexicans, that he might, as it were, order the course of events; fortle as might ensue a retreat, if either from levity or dif- guilt, the Mexicans should take arms against him, and break down the bridges or casemeways. Cortez urged Montezuma to acknowledge himself a vassal of the king of Spain, to hold his crown of him as superior, and to submit his do- minions to the payment of an annual tribute. Such was the influence of the Spanish general over the Mexican monarch, that with this requisition, degrading as it was, he was so obsequious as to comply. This act of submission and homage was executed with all the formality which the Spaniards were pleased to prescribe: and as a profession of fealty and homage, it was accompanied with a magnificent present to his new sovereign; and after his example his subjects also made very liberal contributions. The whole amount of the treasure which the Spaniards had received, by gift or extor- tion, from Montezuma and his subjects, is estimated at six hundred thousand pesos, which was divided by Cortez in the following manner: a fifth was set apart as a tax due to the king; another fifth was allotted to Cortez, as commander in chief; the sums advanced by Velazquez, Cortes, and some of the officers, towards defraying the expence of fitting out the armament, were also deducted; and the re- mainder was divided among the army, in proportion to the different ranks. After so many degradations the fatigue of a private man did not exceed 100 pesos. This occasioned great murmuring among the followers, so that it required all the adresses of Cortez, and no small exertion of his liberality to appease them. Montezuma, though he complied in many instances with the requisitions and wishes of Cortez, was insensible on the subject of religion. When the Spanish commander found all his attempts to make the confi dence of Montezuma unfeizable, he was so much enraged at this ob- stinacy that in a transport of zeal he led out his soldiers to throw down the idols in the great temple by force. But the priests taking arms in defiance of their altars, and the people crowding to support them, Cortes was obliged to desist and his prudence overruled his zeal. The Mexicans, ever since the confinement of their sovereign, had been meditating how they might expel or destroy the Spaniards; and they thought themselves under a kind of sacred obligation to avenge their infilled deities. Montezuma, having called Cortes into his presence, observed to him that, as all the purposes of his embassy were fully accomplished, the goods which he had declared their will, and the people signified their desire, that he and his followers should instantly depart out of the empire. With this he required them to comply, or unavoidable destruction would fall suddenly on their heads. Cortez re- pondered, that he had already begun to prepare for returning to his own country; but as he had engaged the vessels in which he arrived, some time was requisite for building other ships. This appeared reasonable. In this state of anxious and un- peace, a Mexican courier arrived with an account of some ships having appeared on the coast. This was an armament fitted out by Velazquez at Vera Cruz, and instead of bringing the aid they expected, threatened them with utter de- struction. Velazquez had received information concerning Cortes by means of the vessel that had been dispatched for Spain, and which contrary to orders had touched at Cuba. He immediately excused himself in completing an armament, consisting of 18 ships, having on board 80 horsemen, 800 foot foldiers, of whom 80 were musketeers, and 120 cross- bowmen, together with a train of 12 pieces of cannon. The command of this armament was entrusted with Pamp- philo de Narvaez, who had infinonitions to seize Cortes and his principal officers, to send them prisoners to Velazquez, and then to complete the discovery and a conquest of the country; the Mexi- can was alarmed, and without regard to reason, by the news of the arrival of Narvaez; and more especially when he heard, that several provinces, in his inte- rest, began to revolt from him, and to regard Narvaez as a deli- verer no less able than willing to save them. The measures which it would be prudent for him to adopt required the utmost deliberation. After revolving every scheme that pre- sented itself to his mind with deep attention, he adopted that, the execution of which was most hazardous; but which, if successful, would prove most beneficial to his country; and with the decisive intrepidity suited to desperate situa- tions, he determined to make one bold effort for victory under every disadvantage, rather than sacrifice his own con- quests and the Spanish interest in Mexico. When his at- tempts for negotiating with the followers of Narvaez had failed, he determined to advance towards an enemy whom he had in vain endeavoured to appease. Accordingly, having left behind him the capital to guard the city, he took with him the wealth he had amassed, and the person of the imprisoned monarch; he advanced with a force not exceeding 250 men, towards Zempoala, of which Narvaez had taken possession. Hav- ing conciliated some of Narvaez's officers by liberal presents, he attacked him in the night, and availing himself of seve- ral advantages that had occurred, he obtained a decisive vic- tory; so that before morning the officers of Narvaez capi- tulated, and the soldiers laid down their arms, and submit- ted quietly to their conquerors. Soon after this victory Cortez received information from the capital, that the Mexi- can had taken arms against the Spaniards, and therefore he hastened back with all his forces as rapidly as possible; and in his march he was joined at Tlayacal to 2000 chosen war- riors. The Mexicans had made no preparation for refiling his entrance; but immediately on his arrival he was admitted into the city without molestation, and took quiet possession of his ancient fition. Emboldened by his success he treated Montezuma with neglect and his subjects with insult; and thus provoked the Mexicans to renew their hostility. The number who took up arms was considerable, and their cour- rage unshaken. One body of troops succeeded another amidst bloodshed and slaughter, so that the abilities and ex- perience of Cortes, seconded by the valour of his foldiers, were hardly sufficient to defend the fortifications that sur- rounded
Cortes.

rounded the point where the Spaniards were stationed. Cortes prepared for a sally, with such a considerable force as might either drive the enemy out of the city, or compel them to give hostages in terms of accommodation. He attacked them, however, without success; and though vast numbers of the Spaniards fell, the Spaniards were at length obliged to retire, 12 officers having been killed and 63 wounded. In another unsuccessful sally, the general himself was wounded in the hand. When the Mexicans approached to renew the assault, Montezuma was presented to their view; and he addressed them with every argument that could mitigate their rage, or persuade them to cease from hostilities. As soon as he had ended his discourse, the enraged Mexicans poured in flights of arrows and volleys of stones with such violence on the ramparts, as to wound the unhappy monarch and strike him to the ground. Cortes followed him to his apartment in order to console him under his misfortune; but perceiving how low he was sunk, his haughty spirit revived, and he feared to prolong his life after this last humiliation. Stripping the bandages from his wounds in the open face of rage, and refusing to take any nourishment, he loosed ended his wretched days; refusing with disdain all the solicitations of the Spaniards to embrace the Christian faith. Upon the death of Montezuma, Cortes left all hopes of bringing the Mexicans to an accommodation, and prepared for a retreat. But in accomplishing his design, he was engaged in new conflicts. At length they determined to retire secretly in the night; but they had not proceeded far, before the Mexicans discovered them and made dispositions for a formidable attack. When morning dawned, it discovered to Cortes, who had arrived at Tacuba with those of his followers that had survived, his shattered battalion, reduced to less than half its number, in a deserted and wounded condition; and the sight caused the tears to trickle from his eyes, which his officers observed with satisfaction, concluding that while attentive to the duties of a general he was not insensible to the feelings of a man.

Having retired to an adjacent temple for the repose and refreshment of his troops, exhausted with fatigue, he there deliberated what course to pursue; and at length determined to march towards the Tlaxcalan territories. In their way thither they encountered many attacks; but upon their arrival, they were received with tenderness and cordiality. Having obtained several reinforcements, he mustered 559 infantry, of which 80 were armed with muskets or cross-bows, forty horsemen, and a train of 50 field pieces. At the head of the, accompanied by 10,000 Tlaxcalans and other friendly Indians, Cortes began his march towards Mexico, on the 29th of December 1520, six months after his disastrous retreat from that city. As he advanced thither, he found that the Mexicans were prepared to oppose his progress. He therefore took possession of Tezcuco, the second city of the empire, situated on the banks of the lake, about 20 miles from Mexico. Here he established his head-quarters; and deporing the chief who was at the head of the community, he placed another cacique in his room, who, together with his sonerets, served the Spaniards with inviolable fidelity. He employed himself with singular affinity in preparing a naval armament of 13 brigantines, for aiding his future operations; and in the mean while, four ships arrived at Vera Cruz from Hispaniola, with 200 soldiers, eight horses, two battering rams, and a considerable supply of ammunition and arms. Cortes therefore became impatient to commence the siege of the capital in form, and he determined to attack it from three different quarters; from Tezcuco on the east side of the lake, from Tacuba on the west, and from Coyocan towards the south. After repeated and severe contests, in one of which Cortes himself was captured and wounded, though immediately rescued from six Mexican officers, by two of his soldiers, and the loss of several of his men, some of whom were sacrificed with barbarous triumph to the god of war, he found himself, according to his own account, at the head of 150,000 Indians, by whose assistance he was enabled to vary his strategy of attack; and while his brigantines kept possession of the lake, to shut up the avenues to the city by land. In consequence of these measures, not only the people in general, but some even of the highest rank felt the utmost distress of want. The spirit of the emperor Guatimozin, however, still remained unabated; and rejecting every overture of peace from Cortes, resolved not to survive the ruin of the city. The Spaniards continued their progress, and made a secure lodgment in its centre; three-fourths of it being now reduced and laid in ruins. At length Guatimozin was ordered to attempt an escape, but in his endeavours for this purpose, he was taken prisoner, and with dignified composure, surrendered himself into the hands of his conqueror, requiring only that no insult might be offered to the emperor or his children. As soon as the fate of their sovereign was known, the resilience of the Mexicans ceased, and Cortes took possession of that final part of the capital which remained unoccupied. Thus terminated, Aug. 21, 1521, the siege of Mexico, after having continued 73 days; the most memorable event in the conquest of America. As Guatimozin, aware of his impending fate, had ordered a great part of the riches amassed by his ancestors, to be thrown into the lake; and the Indian auxiliaries, during the progress of the siege, had carried off the most valuable part of the spoil, the remaining booty was so small, when a division took place, as to occasion great discontent among the conquerors. In order to check this evil, Cortes perpetrated a deed which flawed the glory of all his great actions. He ordered Guatimozin, and his chief favourite, to be tortured, in order to force from them a discovery of the royal treasures, which they were supposed to have concealed. The emperor endured his sufferings with the invincible fortitude of an American warrior; till at length Cortes, ashamed of a scene so horrid, refused the royal victim from the hands of his tormentors, and prolonged a life reserved for new indignities and sufferings.

The fate of the capital decided that of the empire; and the provinces submitted one after another to the conquerors. Upon this Cortes formed new schemes of discovery, which were afterwards completed by Ferdinand Magellan, or Magellan. See his article.

Whilst Cortes was acquiring such vast territories for his native country, and preparing the way for future conquests, he was regarded as an undutiful and rebellious subject; his conduct in assuming the government of New Spain, was declared to be an irregular usurpation, in contempt of royal authority, and a commission was issued for suspending him, feinting his person, confiscating his effects, making a strict scrutiny into his proceedings, and transmitting the report to the council of the Indies, of which Fonseca, bishop of Burgos, was president. Cortes took secret measures for defeating the effect of this commission, and in May 1522, dispatched deputies to Spain, with a pompous account of the success of his arms, further speculations of the production of the country, and rich presents to the emperor, as carnets of future contributions from his new conquests; requiting, in recompense for his services, the approbation of his proceedings, and that he might be entrusted with the government of those territories, which his conduct, and the valour of his followers, had added to the crown.
CORTES.

Cortes. The public voice declared warmly in favour of his pretensions, and he was appointed by the emperor Charles V., captain-general and governor of New Spain; in consequence of which appointment, he endeavoured by new schemes and arrangements to render his conquest a secure and beneficial acquisition to his country. The emperor at the same time appointed certain commissioners to receive and administer the royal revenue there, with independent jurisdiction. These commissioners lent home unfavourable accounts of the character and conduct of Cortes, which made such an impression on the Spanish ministers, and by their means on the mind of their master, that a new commission was granted, with powers to investigate the truth of these allegations, to rein the person of Cortes, if that measure should be found expedient, and to send their prisoner to Spain. The execution of this commission was prevented by the death of Ponce de Leon, with whom it was entrusted; and Cortes, though deeply wounded with this return for his services, endeavoured to maintain his station, and to recover the confidence of the court. The apprehensions of Charles and his ministers increased; and in 1528, a new commission of inquiry was issued, with more extensive powers. Cortes was extremely indignant; but instead of asserting his own rights against his ungrateful countrymen, and with a bold hand seizing that power which the courtiers meanly accused him of coveting, as fame of his desperate followers advised, he repaired directly to Cadiz, and committed himself and his cause to the justice and generosity of his sovereign. Here he was received in the most respectful manner, and the order of St. Jago, the title of marquis del Valle de Guazaca, and the grant of a vast territory in New Spain, were successively bestowed upon him; and as his conduct was correct and elegant, the emperor admitted him to the free and familiar intercourse that was enjoyed by noblemen of the first rank. Cortes, however, though dignified with new titles, returned to Mexico in 1530, with diminished authority. The military department, with powers to attempt new discoveries, was left in his hands; but the supreme direction of civil affairs was placed in a board called "the Audience of New Spain," and at a subsequent period, a nobleman of high rank was sent thither as viceroy, to take the government into his own hands. The division of power in New Spain, became the source of perpetual dissention, which embittered the life of Cortes, and thwarted all his schemes. Nevertheless, he projected new discoveries, and formed various schemes for that purpose. Having entrusted the execution of some of his plans to others, who were unsuccessful, he determined, in 1536, to undertake in person the conduct of an armament, with which, after enduring incredible hardships, and encountering various dangers, he discovered the large peninsula of California, and surveyed the greatest part of the gulf which separates it from New Spain. Dissatisfied and disenchanted, on a variety of accounts, he once more sought redress in his native country. Accordingly he returned thither in 1540; but his reception was very different from that which gratitude, and even decency, ought to have secured for him. As no farther services could be expected from him in his declining years, he was treated sometimes with neglect, sometimes with insulce. After several years his grievances received no redress, and his claims were ineffectually urged, although from time to time he renewed his application to ministers and judges; and at length, broken down by age, and the vexation of disappointment, he ended his days, December 2, 1547, in the 62d year of his age. "Envied by his contemporaries, and ill-requited by the court which he served, he has been admired and celebrated by succeeding ages. Which has formed the most just estimate of his character, an impartial consideration of his actions must determine." Robertson's History of America, vol. ii. See Mexico.

Cortes, in Geography, a town of Spain, in Navarre; 7 leagues from Tudela.

Cortes, in Political Economy, a term purely Spanish, properly signifying the courts, i.e. the states or assembly of the states, in Spain. In this sense the term has been of ancient use in that kingdom. In Aragon, though the form of government was monarchical, (see Aragon,) yet the genius and maxims of it were purely republican; and the real exercise of power was vested in the cortes or parliament of the kingdom, whilst the sovereign himself retained the mere shadow of power. This supreme assembly was composed of four different arms or members, viz. the nobility of the first rank; the equesrian order, or nobility of the second class; the representatives of the cities and towns, whose right to a place in the cortes, if the historians of Aragon may be credited, was coeval with the constitution; and the ecclesiastical order, composed of the dignitaries of the church, together with the representatives of the inferior clergy. No law could pass in this assembly, without the assent of every single member who had a right to vote. Without the permission of the cortes, no tax could be imposed; no war could be declared; no peace concluded; no money could be coined; nor any alteration be made in the current specie. The power of refining the proceedings of all inferior courts, the privilege of inspecting every department of administration, and the right of redressing all grievances, belonged to the cortes; and those who were aggrieved addressed the cortes, not in the humble tone of suppliants, but with the boldness of persons who demanded the birth-right of freemen, and required the guardians of their liberty to decide on the points referred to their consideration. The sovereign court was held for several centuries every year; but in consequence of a regulation introduced about the beginning of the 14th century, it was convoked from that period only once in two years. After it was assembled, the king had no right to prorogue or dissolve it, without its own consent; and the session continued 40 days. See JUSTIZ.

In the kingdom of Cadiz also, the legislative authority resided in the cortes, which was composed of the nobility, the dignified ecclesiastics, and the representatives of the cities. The assembly of the cortes in Cadiz was very ancient, and seems to have been cival with the constitution. The members of the three different orders, who had a right of suffrage, met in one place, and deliberated as one collective body; the decisions of which were regulated by the sentiments of the majority. The right of imposing taxes, of enacting laws, and of redressing grievances, belonged to this assembly; and in order to secure the loyal of the king to such statutes and regulations as were deemed necessary or beneficial to the kingdom, it was usual in the cortes to take no step towards granting money until all business relative to the public welfare was concluded. The representatives of cities seem to have obtained a seat at a very early period in the cortes of Cadiz. and soon acquired such influence and credit as were very uncommon at a time when the splendour and pre-eminence of the nobility had eclipsed or annihilated all other orders of men. The number of members from cities bore such a proportion to that of the whole collective body, as rendered them extremely respectable in the cortes; and the early admittance of the representatives of cities into this assembly seems to have been one source of the hirty that pertained to the constitution of Cadiz, as well as to that of Aragon. In Catalonia, as well as in Cadiz, the cortes were composed of three elates. The commons were introduced.
introduced into this assembly of Catalonia A. D. 1253; and if to that of Veronig in 1437. In Navarre, the cortex resembled that of Cottle. Robertson's Hist. ch. v. vol. i.

Cortesi, padre Giacomo, in Biography, called licevane Borgognone, a most esteemed painter of battles, was born at St. Hippolite in France, in the year 1621. He derived the first principles of the art from his father, Gis Cortei, a painter of little repute. At the age of fifteen, following the hint of his inclination for traveling, he went to Milan, where good fortune made him known to Baron Vattesio Borgognone, an officer of rank in the service of the King of Spain, who took him into his house, and treated him with the greatest kindness, whence our artist was afterwards called H Borgognone. The consequence of this connection was, that Giacomo for some time embraced the profession of arms, although he still continued occasionally to exercise himself in drawing and painting. His natural genius, however, at length prevailed; and stimulated by the great reputation which Guido and Albano then enjoyed at Bologna, he left Milan, and repaired to that city. The talents of our young artist were sufficient to recommend him to the comte Maro Guido, who received him into his house, and instructed him for several months; but although he made rapid advances in the art, it was not until he had seen the celebrated battle of Conflantine at Rome that he began to exercise his genius developed itself. From this time he principally devoted himself to the painting of battles, which he executed on a small scale, with a variety, a boldness, and a truth of representation, such as no one who had not, like himself, been an eye-witness of such scenes, could have effected. Upon the death of his wife, about the year 1655, he entered into the order of the Jesuits; but his clerical avocations were not permitted to interfere with the exercise of his favourite art. He died at Rome in 1676.

There are a few etchings of battles executed by the hand of this artist with prodigious spirit. Balduccini. Huber.

Cortesi, Gugliemo, brother to the last mentioned artist, was born at St. Hippolite in 1628, and, like his brother, at an early period, repaired to Italy, to perfect himself in historical painting. He became the scholar of Pietro da Cortona, and acquired sufficient reputation to be employed in several considerable altar pieces at Rome. But although Cortona was his master, the style of Carlo Maratta was that to which he more especially adhered; to which he sometimes succeeded in uniting the force of Guercino, and something of the design of the Caracci. The Crucifixion of St. Andrew in the church of that saint at Monte Carlo, and the Battle of Joshua in the palace of the pope, in its vicinity, are amongst his most effective works. He died at Rome in 1779. Lanzii. Ill. Pictor. Huber.


Corex, or Cortical Substance, in Anatomy, is the reddish-grey substance, which, generally speaking, is confined to the external surface of the brain. See Brain.

Coritex, in Vegetable Anatomy, the Bark of Plants, strictly so called, is situated between the cellular integument and the wood. Its cellular structure and appearance have been amply explained in a former part of this work under the term Bark; an account of its phylogeny only remains to be given.

The term libel or inner layer of the bark secreted matter for the formation, not only of a new libel for the ensuing season, but also of a layer of wood, is clearly proved, notwithstanding Mirels's doubts, by the experiment of Dr. Hartford. The late Dr. Hope, Prof. of Botany at Edinburgh, performed an experiment, if possible still more decisive, upon a branch of willow 3 or 4 years old. "The bark was carefully cut through longitudinally on one side for the length of several inches, so that it might be split aside from the wood in the form of a hollow cylinder, the two ends being undisturbed. The edges of the bark were then united as carefully as possible, the wood covered from the air, and the whole bound up to secure it from external injury. After a few years, the branch was cut through transversely. The cylinder of bark was found lined with layers of new wood, whose number added to those in the wood from which it had been split, made up the number of rings in the branch above and below the experiment." The fulness of this account was given to Dr. Smith by the present Professor Hope. See Introduction to Botany, 35.

In describing the Circulation of the Sap we have shown that the nutritive fluids pass along the sap-veins of the young wood into the leaves, and are from thence returned into the libel, which is thus enabled to perform its important functions. Hence if a wound be made in the bark of a tree, and a circular portion removed, the upper edge only of that wound will swell, and the bark gradually extend itself, so as in time to cover the wound again, while the portion of bark below, as far as the next leaf or bud, swells no signs of life. If the wound be only partial, and not extending all round the branch, its sides, supplied from above, will also gradually approach each other. If the dead surface of wood be carefully removed, and the living part secured, by a proper covering or philer, from the injuries of the atmosphere, the bark will speedily close up the wound entirely, as the late Mr. Forthet and others have proved. It seems that the bark is defined to receive and apply to use that vegetal fluid, or sap, upon which essential changes have already been made by air, light, and heat, in its passage through the leaves, rather than to operate any great changes itself in such fluid. Nevertheless, after the woody matter is deposited from it in the form of a new libel, and new albumen, or layer of new unhardened wood, the remainder unquestionably undergoes some further changes, even in the cortex itself. An examination of the more aromatic barks, which abound in essential oils or other secreted fluids of a peculiar nature, affords room to believe that such fluids are fearfully perfected in the cortical layer of the present year, but are more than one or even two seasons in coming to maturity. Hence the qualities of certain plants exist in the greatest perfection in their bark, as the bitter and alluring principles of the Cinnamon, and of various Willows, Oaks; the aromatic oil of the Cinnamon; the resin of the Fir and Juniper, &c. Nor does this hold good with respect to trees only. Perennial herbaceous plants have frequently a very distinct bark to their roots, abundant in secreted fluids. Even annual or biennial roots, as the Carrot and Parfum, are furnished occasioned with a very thick bark, though but one layer, nor indeed are the layers in the barks of perennial roots commonly defined with precision like those of trees.

The texture, appearance, and qualities of the fibres of the bark, in different species or natural orders of vegetables, differ no less than its secreted fluids. Thus the Flax is pre-eminently
eminently distinguished for its fineness, and the hemp for its strength. The bark of the Mallow tribe in general affords useful thread of a more or less perfect kind. The Daphne and its allies, among which is the lace-bark of Jamaica, are remarkable for the pure white fibres of their cortical threads, which however are deficient in tenacity.  

Cortex Eucalyptus. See THUS JUDORUM.

Cortex Peruviensis, called also guiquina, hinkuma, quinquina, pulvis putamans, and popularly the jefful's bark, is the bark of a tree, growing in the West Indies, called by the Spaniards palo de calendulas, q. d. fever-wood; by reason of its extraordinary virtue in removing all kinds of intermitting fevers and agues. See CINCHONA.

Cortex Simaruba. See Quassia.

Cortex Winterana, or Winteri, the bark of a tree brought from the shores of Magellan, by captain Winter, in his voyage with sir Francis Drake, in 1579. Chulus calls the tree, Magellnica aromatica arbor. See CANELLA, and Wintera Aromatica.

Cortez, Gregory, in Biography, descended from an ancient family at Modern, was born towards the end of the 15th century. Early in life he distinguished himself by his knowledge of the classics, and the canon and civil law. He was patronized by John de Medici, afterwards pope Leo X., but differing the juridical employment, he determined to give the whole bent of his mind to theology, and accordingly took the habit of the Benedictine order, in which he rose successively to the most honourable offices, and in 1541 was made a cardinal. On this occasion he received very flattering congratulations from person of the highest rank in the college, which professed to himself and the world in how high estimation he was held by his contemporaries. His conduct through life merited the epigrams which his virtues and talents had called forth in this inscription. He died at Rome in the year 1548. He was an excellent Latin writer, and was author of many works, of which the chief are "De Theologica Institutione Libris," "De Potestate Ecclesiastica Tractatus Libri," and "Epiphilarum Familiarum Libri." His last work, which was printed at Venice 25 years after the author's death, contains his correspondence with the learned men of his own age. Morei.

CORTICATA, in Ancient Geography, an isle of the ocean, on the coast of Spain, according to Pliny. F. Har- douin thinks that it is the modern isle of Siloea. On the chart of M. d'Anville it is marked near the coast, and to the W. of Magnus Portus.—Alfo, a town of Spain, in Beticca, placed by Pliny in the country of the Turdetani.

CORTICELLI, Salvatore, in Biography, a Bolognese, who in the early part of life was profitor of the belles lettres in the college of St. Paul, Bologna. He became a monk, and was in process of time provincial of his order. He was held in high estimation by pope Benedict XIV.; and as an author he is known and celebrated for an "Italian Grammar," written upon the most methodical principles; and for a work entitled "L'Eloquenza Italiana," intended to illustrate the higher departments of the belles lettres. Corticelli died about the year 1722.

CORTICOS, in Geography, a town of Portugal, in the province of Traslos-montes; 3 leagues E. of Miranda. CORTLAND, a township of America, in the N. part of the county of W. Cheffle, on the E. bank of Hudson river, in the state of New York, containing 1932 inhabitants, of whom 66 are slaves. Of its inhabitants in 1790, 305 were electors.

CORTONA, Pietro da, in Biography. See Berre- tini.

CORTONA, in Ancient Geography, lay S. of Arentium, and at a small distance N.W. of the lake Trajaneus. It is Vol. X.
CORVET, or CORVEE, from the Italian corveto or corbetto, a crow, in the Manege, an air, resembling the hops of a crow, in which the horse's legs are raised higher than in the demi-volte; being a kind of leap up and a little forwards, wherein the horse raises both his fore-legs at once, equally advanced (when he is going straight forward, and not in a circle); and as his fore-legs are falling, he immediately raises his hind-legs, equally advanced; and not one before the other: so that all his four legs are in the air at once; and as he sets them down, he marks but twice with them. 

Curvets are derived from and drawn out of the Psefades. They are lower before: the horse must advance, his haunches must follow closer, and beat or mark a quicker time: the haunches must be bent, his hocks be firm, and his two hinder feet advance equally at every time; and their action must be short and quick, joll, and in exact measure and proportion. This action, when suited to the strength and disposition of the horse, is not only beautiful in itself, but even necessary to fix and place his head; because this air is, or ought to be, founded upon the true appuy of his mouth. It likewise lightens the fore-part; for as it cannot be performed unless the horse collects his strength upon his haunches, it must consequtantly take the weight from the shoulders.

Horses that are very dull, or very fiery, are improper for curvets; this being the most difficult air they can make, and requiring a great deal of judgment in the rider, as well as patience in the horse, to perform it.

To succeed in this air, it is necessary that the horse should be perfectly obedient to the hand and heel; supple, and able to work upon one line or path, with freedom and ease; and likewise very well seated upon his haunches in his terrene.

Curvets are made with both hind-horns, which have bad and which have any weakness or complaint in their hocks, whatever other powers and qualifications they may posses. Before a horse is put to make curvets, he ought to work terre à derecho; and if he cannot do this, he ought to be able to change hands upon one and two lines, to go off readily, and to make a good dopp. After this, he should be able to make pefedes easily, or go high before as to be felt and supported in the hand; and always make them upon a straight line. After this, let him perform two or three curvets; let him then go two or three steps, and then make two or three curvets, and so alternately. If you find that your horse is well in the hand, and that he advances regularly, is patient, and does not break his line, but keep even upon it, he will dress very easily, and soon; if he prefers too much forward, make him curvet in the same place, and make him often go backward. After he has thus made two or three, demand three more of him, afterwards make him go backward, and so successively.

As few horses, in making curvets, plant themselves well upon their haunches and hocks, and bent and marked equally and materially the direction of the air, and keep their heads true, and croup steady; the first lesson should be slow and gentle, the horse being made to rise very high before, because the longer time he is in the air, the more easy it will be for him to adjust himself upon his haunches, and to assure his head, and bend or gather up his fore legs; on the contrary, if he does not rise high before, he only beats and throws about the dopp, and shuffles his legs, and can never assemble the different parts of his body, and be united, as he ought to be, in this manage.

This air is performed, in equal time and measure, by keeping the horse in, and with a good and just appuy; the rider keeping him stiff, straight, and well stretched down in the saddle, and lifting his hand about three fingers breadth above the pommel of the saddle, with his body a little forward, and putting no ilres on his legs.

It is not necessary that a horse should be absolutely perfect in curvets straight forward, before you put him to make them upon voltes; but as soon as he is grounded a little in curvets straight forward, it is right to begin to teach him the turns, and to get him to the proportions of the volte. There are three actions, and three motions, still to be considered in making curvets. These are: to raise him, or lift him up as it were by the action of the hand; to support him while he is in the air, or hinder him from bringing his fore-part too soon to the ground; and to make him go forward, while he is off the ground. To make a horse go in curvets side-ways, aid only with the hand, keeping his head to the wall. To the right, aid him chiefly with the outward rein, by turning your hand to the right; for then the left rein, or outward-rein, will be shortened, and operate upon the shoulders, so as to work them. Let him make these curvets side-ways; passage him afterwards always side-ways; then let him make the same number of curvets side-ways and obliquely again, and begin by little and little to diminish his passage, and augment...
augment the curves, till he is able to furnish, without intervals, an entire volce upon two lines. Curves made backward are more fatiguing, and more apt to make a horse rebel, than curves steeright forward upon the volces, demi volces, or side-ways. To teach him, make him go backward; afterwards put him to make three or four curves in the same place, without advancing. Then make him go backward again; let him make the fame number again, and so successively, till he makes them readily and without resistance. To go backwards in curves, aid with the outward-rein; you will thus confuse the fore-part, and widen the hinder legs, which ought to be at liberty, because it is with them that he leads. You must keep your hand low, that the horse may not go too high. Let your body be a little forward, to give the greater liberty to the hinder legs, which are those that lead, and do not think with your legs, unless he drags his haunches. If the horse does not unite of his own accord, you must catch the time with your bridle-hand, as the horse is coming to the ground; in that instant put your hand towards your body, and so pull him back. In making curves upon the volces, let only your outward hip and outward baunch be a little advanced, and remember to loosen always and relax the inside of your hams, or your legs from the knees. When you would change to the left, let your hand accompany and correspond with your right leg, which is to operate; when you would change to the right, let it answer to your left leg:—having given this aid, replace yourself, stretch yourself down again in your saddle, take away your legs, one or the other, forbear to aid, and let the balance of the body be no more than just in the inside. Having acquired the art of working a horse in curves steeright forwards, backwards, side-ways, to the right and left, you will easily teach your horse to make the figure of a crufh, or even dance the baraband in this air. See Bercanger's Art of Horsemanship, vol. II. p. 117, &c.

Some derive the term from the Spanifh corva, signifying the back at the hinder leg, because the horse bends his hocks, and throws his weight upon them, in executing this manage. This air was called by the older Italian masters urfa, or the gambols of a bear, from urfa, a bear; as the horse, in making curves, was thought to resemble the motions of a bear, when he dances upon his hinder feet.

CORVEY, or CORVEY, in Geography, a town and celebrated abbey of Germany, and small principality in the circle of Welfphalia, about 12 miles long and 10 wide, situated on the western bank of the Weler. The abbey was founded in the year 822; its annual revenues are about 32,000 or 40,000 florins; 24 miles E. of Paderborn. N. lat. 51° 39'. E. long. 8° 54'. By the treaty of indemnities in 1803, the bishopric of Corvey, and also that of Fulda, together with the imperial town of Dortmund, and several abbeys, were aligned to the prince of Orange, as the indemnity for the office of bishopholder, and his domains in Holland.

CORVINI, in Ichthyology. See GUATOCUSA.

CORVINARI. Thence anciently were soldiers who fought on large chariots armed with spears on their sides.

CORVINI, Matthew, in Biography, king of Hungary and Bohemia, lived in the 15th century, and died in the year 1492. He was both a lover and guardian of literature. He purchased innumerable volumes of Greek and Hebrew writers at Constantinople, and other Grecian cities, when they were seized by the Turks; and as the operations of typography were then imperfect, he employed at Florence many learned librarians to multiply copies of classics, both Greek and Latin, which he could not procure in Greece. Thence, to the number of 50,000, he placed in a tower, which he had erected in the metropolis of Buda; and in this library he established 39 amanuenses, skilful in painting, illuminating, and writing: who, under the conduct of Felix Ragundus, a Dalmatian, consecutively learned in the Greek, Chaldaic, and Arabic languages, and an elegant designer and painter of ornaments on vellum, attended incessantly to the business of transcription and decoration. The librarian was Bartholomew Fontius, a learned Florentine, the writer of many philosophical works, and a professor of Greek and oratory at Florence. When Buda was taken by the Turks, in the year 1526, cardinal Bozmann offered for the redemption of this inestimable collection 200,000 pieces of the Imperial money, but without effect; for the barbarous beholders defaced or destroyed most of the books, in the violence of seizing the splendid covers, and the silver bollofs and claps with which they were enriched. Whitson's Hist. of English Poetry, vol. II. p. 447.

CORVINDUM NELLA. See NELLA CORVINDUM.

CORVINUS, John Augustus, in Biography, an engraver, born at Leipie 1681. He went to reside at Augsburg, where he engraved plates for several considerable works published in that city; but his style, though neat, is stiff and without taste. He died at Augsburg in 1738.

Amongst his engravings are several of the plates for a work called, "Repertorium Belli ob Successionem in Regno Hispanico," most of those for "the Bible of Scheuchzer," and a collection of views of churches in Vienna. Strutt. Heinecken.

CORVINUS Lapis, in Natural History, a name given by fome to the belemnites; but by others to a very different body of a whitish colour, and oval figure, convex on one side, and concave on the other, and in the middle of the concave fide there arifes a tubercle: this is faid to be taken out of the head of a fish; and it is very probable that the authors may mean by this no other than our crab's eyes.

CORVIPETA AVIS, in Ornithology. See GUFTUITE.

CORULA, in Ancient Geography, an ancient town of India, on this fide of the Ganges. Ptolemy.

CORUNCALA, a town of India, on this fide of the Ganges. Ptolemy.

CORUNDUM. See ADAMANTINE SPAR.

CORUNNA, in Geography, a fea-port town of Spain, in the province of Galicia; of which it is deemed the capital, being the seat of a royal audience, of a governor-general, and the intendant of the province. It is divided into the Upper and Lower Town; the former situated on the fide of a hill, surrounded with walls, and defended by a caflle; the latter, called also "Paxaria," is feated at the bottom of a hill, on a tongue of land, wafhed on three fides by the waters of the Atlantic. The town is of a circular form, fortified in the ancient manner, and contains one collegiate and four parifh churches, and four convents. The harbour, called by our mariners the "Groym," is large and safe, and defended by two caflles; 60 miles N. of Orenfe. N. lat. 43° 29'. W. long. 8° 15'.

CORVO, one of the African iflands, usually included under the general appellation of the Azores, though improperly, as this small ifland, as well as Fiores, lying about a league to the N. of it, is diftant 70 leagues W. of Tercera. This ifland is about 30 leagues in circuit, has a small port, and contains about 500 inhabitants. It is faid to have derived its name from the vall number of crows obferved here by its first discoverers, every tree and rock being covered with their nests. Its productions are the fame with those of Fiores. The Portuguese are faid to keep poftition...
of these islands, not on account of their intrinsic importance, but in order to prevent other nations from establishing themselves here, and thus endangering the security of the Azorer. *N. lat. 59° 43', W. long. 31° 6'.

**COR** needs it, is Siguafsie articles upon hand a being town Herod. As hour firing, tho'fe however, Natural and, water, which, the yet appear very an is fubftance the may order moun-p. fhort, thoroughly Ptolemy, phorized dark fome Chomer, name fmall intervals for It burning meft

**COR**..."
CORVUS.

firm ground. Being more expert at this kind of fight than the Carthaginians, and better armed, they soon gained the advantage over them and took 50 ships, with all their crews. Among these was the admiral's own galley, a pteri-

remis, which had been formerly taken by the Carthaginians from king Pyrrhus. Hannibal himself was on board of it; but when he saw the Romans entering his galley he leaped into a small boat, and escaped. At length the rest of the Carthaginian fleet, consisting of 120 galleys, came up, and fell upon the Romans. As they had greatly the advantage in the lightnings of their vessels, they nim-

bly rowed round the Romans galleys, in order to avoid the corvi. But the Romans having learned the art of working their ships, so as to present their machines to the enemy, which way forever they approached them, took 50 more of the Carthaginian ships, and obliged the rest to re-

tire into the neighbouring ports of Sicily. In two engage-

ments the Romans took 7000 prisoners, killed 7000 men, sank 13 ships, and took 82. After this victory, Dutill, the Roman consul, going aboard, put himself at the head of the land-forces, relieved Segesta, which was besieged by Hamilcar, and made himself master of Messana, though defended by a numerous garrison. Polybius, uii. capra.

CORVUS. Raven, in Aenianomy, a constellation of the southern hemisphere; whole stars in Ptolomy's Catalogue are 75; In Tycho's as many; in the Britannic Catalogue 9. See Constitution. For the figure of the stars in corvis, see Dr. Herchel's second catalogue in Phil. Trans. for 1795, pt. ii. vol. xxxvi. p. 458 &c.

CORVUS, in Ichthyology, a name given by Panus Jo-

vius to the fisher, or doree. See Zies ichthyus.

CORVUS is also the name given by Playn and Salivan to the sub-fish, or Trigla hirundo; which leee.

CORVUS piceps, the crow-fish, a river fish of the chub kind, common in Italy, and in some parts of Germany, and called by Goefer, capito fluvialitis ranas, and by the common people rappe. This is the Cyprinus affinis of Gmel-

lin; which leee. It seldom grows to more than six or seven (Gmelin says 1 2) pounds weight; it is an extremely rapacious fish, not less so than the pike, and very frequently chases its prey so hard as to drive them out upon the banks, and, in that case, he usually follows them also; and both are frequently taken, floured together. It is caught at all seasons of the year, but never in any great abundance; it is esteemed a very delicate fish.

CORVUS, in Ornithology, a numerous and interesting genus of the Pico order. These are the crows of English authors.

Birds of this kind have the bill convex and acute at the edges; the nostrils covered with fetaceous recumbent feathers; tongue cartilaginous and bifid; feet formed for walking.

Most of the species in this genus are found widely di-

pered over every part of the globe. They build in trees and lay about six eggs. Crows are of a social nature, very clamorous, and promiscuous feeders, subsisting both on animal and vegetable food. Many birds of this tribe inhabit Britain.

Species.


From its superior magnitude the raven is considered as the full species of the corvus genus; this weighing about three pounds, and in length measuring two feet, its breadth four. The general colour of its plumage is black richly gilt-

ed above with blue, and the under parts more obscure. The raven inhabits Europe, Siberia, and North America, feeding on carrion, small birds, eggs, fish, berries, &c. It is esteemed a crafty bird, and of a thievish noisy disposition; it may be in a great measure domiciliated and taught to articulate.

In this country it builds in high trees, but is observed to form its nest in cavities of the rocks in Greenland and Ice-

land. It is the only kind of crow found in Greenland, where the flesh is eaten by the natives and the skin employ-

ed as a covering next their bodies. The principal varie-

ties of this bird are the Cacotol of Fernand; found in New Spain, and is of the pied kind, being varied with white; the white raven of Norway, Corvus albus of Schwennck; and Corvus borealis albus of Buffon. Neither of these can be considered as a permanent but as accidental varieties; ravens and other birds both of the pied fort, and perfectly white having been occasionally reared from the same brood with those of the ordinary kinds.

HOTENTOTUS. Greenish-black; tail even; whisters very large. Linn. Monedula capitis bona feet, Brill. Choucas mouflache, Buff. Hottentot crow.

Size of a black bird; length seven inches and a quarter; the bill an inch and a half long, of a black colour and bent a little; the feathers about the nostrils velvety, the corner-

ners of the mouth befit with short stiff bristles, and the nostrils furnished with whisters three inches long. The feathers on the head, throat, and neck are of a shining black green; those on the upper part of the neck narrow and longer than the rest, flowing over the back; the other parts of the plumage greenish-black changeable to blue; legs and claws black. This inhabits the Cape of Good Hope.

CLERICUS. Black; chin white, base of the bill cine-

reous. Sparman Muf.

Inhabits Sweden according to the above-mentioned writer, and is extremely rare; the colour of the body is footy black above; the wings and tail inclining to dark olive. This is perhaps only a variety of the carrion crow.


A species found in Europe, Siberia, North America, New Guinea, New Holland, and some other parts of the world. The length of this bird is eighteen inches, its form and manners much resembling those of the raven. Like that bird it builds its nest on high trees, and lays about six eggs; it also delights in carrion and animal food like the raven, and makes great havoc among young game of all kinds. This bird, though so common in England, is said to be very sparingly met with throughout the northern parts of Europe.

A variety of this crow is described by Brunnich, which has the cheeks, fore part of the neck, middle of the belly, rump, and quills white, and the rest of the plumage black. This is found in the Ferroes. Schwenckfield mentions another kind which was wholly white, except the legs and bill; the colour was not pure white, and the irides were red.


A native of the Friendly islands and New Holland. The length is nineteen inches; the bill brown at the base, and much compressed at the sides; the plumage dusky black; the
CORVUS.

The feathers beneath the chin of a remarkably loose texture; tail eight inches long, and the legs and claws black.

ALBICOLLIS. Blackish; wing-coverts brown; a broad semilunar white patch on the neck; bill carinated. Lath. &c. White-necked South sea raven.

This bird was first described by Dr. Latham, in the supplement to his Synopsis, from a specimen in the British Museum. The bill in this is ridged and arched on the top of the upper mandible, like that of the ani, but is not sharp at the edge. The general colour of the plumage is black, but the whole of the hind part of the neck in this specimen is white, and advances in a somewhat crescent form on the fore part; the bill is thicker, the legs more scaly and rough, and the claws larger than in the former bird; but whether it ought not rather to be regarded as the adult male of that bird, than as a distinct species, items uncertain. It is supposed to have been brought from Africa.


The rook inhabits most parts of Europe, and extends as far as western Siberia. It is rather larger than the crow, but so nearly resembles that bird in other particulars as to be scarcely distinguish'd from it, except in having the skin about the nostrils and base of the bill bare, while in the crow those parts are well clothed with feathers and brilly hairs. This is not a natural character, but arises from the habits of the bird, who is continually thrashing the bill into the earth in quest of worms, and the larvae of insects, for it does not subsist on carrion like the other. The rook feeds on grain, and sometimes trelfalies on cultivated grounds, to the injury of the husbandman; but his good services considerably overbalance thefle few depredations, in the extirpation of the maggots of the chafer beetle (cetonia melolontha), which, feeding at the roots of the corn, would oftentimes deflow whole crops, were they not destroyed by these nieful birds.

This is a gregarious bird, and is sometimes seen in immense flocks, so numerous indeed as to almost darken the air in their flights, which they regularly perform morning and evening, except in the breeding time, when the daily attendance of both male and female is requisite to the purposes of incubation, or feeding their young. They build in the highest trees, beginning to form their nests in March, and forsaking their breeding places when the young are reared. The young rooks are deemed good eating.


Inhabits Europe, part of Asia, and America likewise, if the crow mentioned by Kalm as being found in Pennsylvania is of this species. This bird is about the size of the rook, or rather larger; and twenty two inches in length. The plumage as above described; with the bill and legs black, and the irides hazel. Its manners coincide in some degree with those of the rook, and the crow; like the latter feeding at times on carrion, young birds, and other deadmelses animals; or at other times, like the rook, being content with insects, feeds, and berries. They are also gregarious, and build in trees. It is found in the southern parts of Britain only in the winter, but remains in Scotland throughout the year, and is the only kind of crow that inhabits the Scottish highlands.


This bird is the size of a small crow, and rather exceeding the length of twelve inches. The bill is black; the head and throat black, gloss'd with blue, as is also the roll of the plumage, except the neck and breast, which are white. It inhabits Africa and Asia. Pallas says it comes early in the spring in great flights from China, and the southern Mongols country, into the parts about the lake Balish, but they are most frequent about the towns and villages on the river Lena. This writer mentions a variety of this, the plumage of which is black, with the nape of the neck and throat brown.


This description of this bird is taken from a drawing in the collection of Sir Joseph Banks. The length is above fifteen inches; bill flat, and of a black colour; irides pale yellow; eye-lids black. General colour of the plumage cireous, except the tail, which is five inches in length, and of a black colour; legs black. Inhabits New Caledonia.


Size of a crow, with the bill and legs like the plumage, black. This bird is common in Jamaica, where it frequents the mountainous parts of the island. It makes a chattering noise, different from any of the European crows, and is esteemed by some good eating. Its food consists of berries and insects.


This bird, though abundant in Britain, is far from common throughout Europe; with us they remain the whole year; but are migratory in most other parts. They seldom build their nests in trees like the rook, more commonly in rocks, old towers, and ruined edifices; and lay from five to six eggs, which are paler, smaller, and have fewer spots than those of the crows.

There are many varieties of this bird, fome of which may be proper to notice. The Helvetican daw of Charlton, le choucas à collier of Briffon, differs in having a collar of white round the neck; this is the collar'd jackdaw of Latham, and is found in Switzerland. The white jackdaw is entirely of a white colour, with the bill yellowish; monedula candida of Schwenk., and le choucas blanc of Briffon. The black jackdaw of English writers is le choucas noir of Buffon and Schwarze dible de Frich. This bird differs from the common jackdaw in wanting the greyish tinge about the head, in being of a smaller size, and having many white spots about the eyes. Dr. Latham mentions one formerly in the Leverian Museum, which was ' like the common ones in all things, except the mandibles, both of which crock'd each other, as in the croft-bill.' This is at present in the London Museum.


The jay is a beautiful species, and measures about thirteen inches in length; it is common in our woods, and is well known to be a reftless noisy bird. They build in woods, making the nest of sticks, fibres of plant roots, and tender twigs; and lay five or six eggs, of the size of a pigeon's, the colour
CORYNV.

colour of which is cinereous-olive, marked with pale brown. The young remain with the old ones till the next pairing-time, in spring, when each makes choice of a mate. In general they feed on zeorns, nuts, seeds, and fruits of all kinds, and oftentimes destroy young chickens, or their eggs, small birds, 

The tail was somewhat rumpiy.

The blucifh-alh back.

The bluck-fishal" flocks in wood, the the Sound, and bleak. Tannen.

The back and wings are violet, tinged with ash-colour. The tail violet, with the edges brown, and white tips, except the two middle ones, which are violet brown; legs and claws grey.

Inhabits Ceyrene.

Auritus. Somewhat crested, and cinereous-brown; frontlet of the head and chin black; spot in front and at the ears white; quill feathers black, edged with grey. Lath. 
Pul. gyzy de la Chine, Sonnerat. White-cared jay.

Described from Sonnerat as a native of China, where it is said to be common about Canton, and seen in flocks in Dean's island, Wampoo river, picking up food on the mud of the shore. It is the size of the blue jay; the bill black, with the ridge of the upper mandible sharp; the top of the head crested; and of a blueish-ah colour; tail four inches long, of a somewhat rounded form, and curving a little downwards; legs pale brown, with the hind claw large, and much incrusted.


The present species is described by Dr. Latham, on the authority of a drawing in the collection of the late Dr. Fothergill. The bill is lead-coloured; the nostrils covered with reflected feathers; tail rather long, and legs flesh-colour. Supposed to be a native of China.


Inhabits China, especially the island of Macao. Its size is one-third less than the common magpie. The bill and forehead black; irides yellowish; top of the head cinereous grey, neck and breast dirty grey; belly and thighs the same, but paler; rump cinereous grey; second quills greenish-black; legs black.

Rufus. Reddish, beneath reddish-white; head and neck fuscous; wing-coverts and second quills grey; lateral tail-feathers grey, the extreme half brown, with the tips white. Corvus iufus, Lath. Pie rouff de la Chine, Sonnerat. Rufus crow.

This is the size of a black-bird, and has a black bill, the irides rufous yellow; breast and belly rufous white; back and rump yellowish, inclining to rufous; lighter wing-coverts dirty rufous; tail cuneated and the middle two feathers brown at the ends; legs black. A native of China.

Carycataxces. Brown dotted with white; wings and tail black; tail-feathers white at the tips, with the middle ones broken at the ends. Linn. Corvus cinereus, caudat olivace nigrit. F. Svec. Carycattcher, Gelm. Ray 

&c. Morlo saxatilis, Adr. Noftratrga, Brit. Tannen- 
Heber, Fich. Waldhau, Steinheber, Kram. Noftraktes, 

Found in various parts of Europe, but are most common, 

in
CORVUS.

in Germany. Its size is that of a magpie, the bill nearly straight, about two inches in length, and of a black colour; iris hazel; legs black. In its manners of life it resembles the jay, but is said to frequently pierce the trees like the woodpecker; the principal food of this bird is acorns, nuts, and the seeds of pines, or berries and insects.


This is the size of a black-bird; the plumage black, glistening with green; tail nearly four inches long, and much forked; the legs and claws black. The species inhabits the Philippine islands where it is called Bali Caffino, and is reputed a good fowler.


Inhabits New Guinea. Its size is that of a jackdaw, the bill strong and blackish, the forehead and round the bill black paling in a streak through the eyes, and a little behind them. The head, neck, back, and upper parts of the breast dark ash-colour; wings dusky, edged with white; tail black; legs short and dusky. A variety of this bird is described in Dr. Latham's Ind. Orn. which is of a cinereous colour, with the head and neck blueish; frontlet and band through the eyes black; breast and belly pale rufous; and the legs fleshy red and wrinkled.


The length of this bird is eleven inches, the bill yellowish, back of the upper mandible angular; legs small and cinereous, claws short. This kind inhabits New Guinea.


A native of Cayenne. This is about the size of the Miculda; the bill is broad at the base, and of a dirty ash-colour; legs yellowish; tail even.

C A L V U S. Ferruginous brown; front and crown baiL. Gmel. Choucas chauve, Buff. Bald crow.

The great singularity of this bird consists in the fore part of the head as far as the crown, and beyond the eyes, being bare of feathers, and the chin sparingly covered: the bill is black and the legs dusky. A native of Cayenne.

P A C I F I C I C U S. Cinereous, inclining beneath to bay colour; hind head, neck, wings, and tail black, the two last tipped with white. Gmel. Pacific crow.

Length ten inches and a half, the bill straight, somewhat bent at the end, and notched near the tip: legs and claws black. Inhabits the South Sea islands.

T R O P I C U S. Black; vent dotty with dirty white; tail rounded. Gmel. Tropic crow.

The length of this bird is twelve inches and a half; the bill an inch and a quarter long, at the base rather broad, and the tips of both mandibles notched; the plumage of a glossy black above, beneath more obscure; wings and tail black glistening with green, the latter rounded; vent and feathers at the rump tipped with whitish; legs and claws black. Described from a bird of the possession of Sir Joseph Banks, brought from O-wy-hoe, one of the Sandwich islands.

B A B R O N Y N C H O S. Body above fuscous, beneath whitish; tail uncated; quill-feathers at the base pale vio-

let, in the middle black with the tips white. Gmel. Red-billed jay.

Rather larger than the common jay. The bill is red (whence its name); the fore part of the head, neck, and breast velvet black; hind part of the head and neck light grey, irregularly variegated with black on the fore part of the head. The body is tinged throughout with violet, which is most conspicuous on the wings. All the feathers consist of three colours, being of a light violet at the base, black in the middle, and white at the end; the legs are red, with the claws long, whitish, and hooked, and the point black.

S I N E N S I S. Above tawny-red, crown brown; eye-brows white; tail brown and cuneated, with a black band towards the tip; and dirty white roundish spots near the end. Gmel. Chincefe jay.

The description of this beautiful bird is taken from a drawing of Chincefe birds in the collection of the late Dr. Forbes.

S I B E R I C U S. Above cinereous; beneath rufly-orange; quill and two middle tail-feathers cinereous, the rest orange. Gmel. Geyr de Siberie, Buff. Siberian jay.

Inhabits Siberia, and measures in length about ten inches. The bill is dusky: front, cheeks, chin, and throat pale; crown somewhat crested, and brownish-black; rump rufly-orange; legs cinereous. The manners of this bird are unknown.

P E R U V I A N U S. Above pale green; beneath pale yellow; crown white; a black narrow band down the chin and throat; the three exterior tail-feathers on each side yellow. Gmel. Geyr de Peru, Buff. Peruvian jay.

Buffon describes this bird, but on what authority does not appear; it is said to be a beautiful species, and a native of Peru.


The length of this species is nine inches. The bill like that of the common jay, short, and of a dusky colour; along the middle of the crown is a longitudinal golden streak; the legs are slender, straight, and of a horn colour.


Inhabits Africa, about Senegal. The length is fourteen inches. Body beneath dirty black; bill black; quill and tail-feathers brown, edged with violet-black. The Gmelian corvus afer is imagined to be a variety of this species.

C Y A N U S. Cinerous; crown deep shining black; wings and tail blue; tail feathers very long, the middle ones tipped with white. Pallas. Blue crow.

About nine inches in length, and inhabits Dauria. The species is gregarious, timid, cunning, and noisy, and builds among shrubs and willows.


There are several varieties of this species, one of which has the body longitudinally streaked with black and white, and another the plumage white altogether. The magpie is a native of Europe, North America, and Asia.

The magpie appears to be everywhere common in Britain; it is found as far to the south as Italy, and to the north to Sweden and Denmark. Forster met with it at Madeira, and it is also seen in America but not commonly. At Hudson's
Hudson's bay it is called Oost-a-kee-alce. In manners this bird approaches the crow, feeding indiscriminately on animal and vegetable food; and is very destructive to gardens and orchards. It is a crafty, sly, and cautious bird, and if domesticated when young may be taught to imitate the human voice; but its articulation is more defective than that of the parrot. The magpie builds its nest with art, forming a thorny covering at top, and leaving a hole on the side for admission; the eggs, about six or seven in number, are of a greenish colour thickly spotted with black.

**Carnbœbus.** Above ferruginous, beneath white; head, neck, and tail coarsely, and frilled with white; collar and spot on the hind head white. Gmel. Gallus pinnatus, Buff. Pie des antilles, Buff.

This is the same size as the common magpie. The bill and legs are red; spot on the hind head in the male transfusively lined with black; rump and under tail-coverts yellow, the quill-feathers blue-green; lesser wing-coverts chiefnut, green in the middle, the greater wing-coverts blue with the shafts and edges whithis. In the female, the greater wing-coverts are green. Described from Du Tertre's History of the Antilles.

**Africanus.** Above brown, beneath fuscous; head somewhat crested, and with the neck purple; tail coarsely and white at the tip. Gmel. African crow.

The length of this bird is twenty-two inches, the bill and legs red; feathers of the hind head tipped with grey; quill-feathers blueish at the outer margin. An African species.


Inhabits Mexico, where it is said to have all the manners of the magpie, as well as cunning, and learning to talk like that bird; its natural cry is not unlike that of a starling.

**Brachyurus.** Green beneath; and lines on the head tawny; wings with a white spot. Gmel. Merula variabilis melanocentris, Buff. Pica indica vulgaria, Ray. Brachy de Bengale, &c. de Bengale, Buff. Short-tailed crow.

This is the size of a blackbird; the bill grey-brown, with the corners of the mouth orange; irides whitish; head and throat black; over each eye a fuscous stripe, from the nostrils to the hind head; back part of the neck, back, and scapulars fine green; throat, neck, breast, belly, sides, and thighs fuscous; lesser wing-coverts thinner blue-green; quills black, on the ruff fix a white spot about the middle; tail about an inch in length, black, with the tip green; legs orange; claws dirty red. Inhabits the Malacca style.

There are several varieties of this species, the principal of which are the following:

α. Corvus philippensis, Gmel. Breve des Philippines. The colour of this is green, with the head and neck black; rump and wing-coverts blue-green; tail black; undercoverts rosy.

γ. Corvus Bengalensis, Gmel. Breve, Buff. Madras jay of Ray, and Bengal quail of Albin. This inhabits Ceylon; the colour is green, beneath yellowish; head and neck black, streaked with orange and white; quill and tail-feathers black. Klein calls this cucurina ceylonensis.

δ. Corvus Madagascariensis, green, beneath yellowish; head blackish brown; neck yellowish; black lamelle on the neck, behind, and two bands of the same colour beneath the eyes.

ε. Breve de Malacca, Sonnerat. This has the head and neck black; eye-lids green, edged with blue; chin white; throat and back greenish; abdomen rufous; vent red. A native of Malacca.

ζ. Breve de la côte de Malabar, Sonnerat. The head and neck of this bird are black, with the crown and longitudinal band rufous; throat white; breast redder; abdomen, thighs, and vent red. Found on the coast of Malabar.

η. Chinese short-tailed crow. Green; crown fuscous; neck and collar white; nape and stripe through and round the eyes black; abdomen white; anal and sub-anal spot and vent ventral. This elegant variety is described on the authority of a drawing in the collection of the late Dr. Fothergill. It is a native of China.

The short-tailed crows are in general small birds not exceeding the length of fix or seven inches.


This bird inhabits Canada, and is frequent near Hudson's bay, where it is known by the name of Whilkijolin, and Whilkijack; they breed early in spring, and build in pine-trees. The young brood seldom confine themselves of more than two, or rarely three. Their food morsels, worms, and flesh. It is rather smaller than the common jay.


Inhabits the Alps, and measures about 15 inches in length.


Length 16 inches. This species inhabits the Alps, and other parts of Europe, and is also found in Egypt and Persia. They build chiefly in rocks, and feed on berries and insects.

**Australis.** Above black; beneath cinereous, with the bill red; wing-coverts spotted with white; tail rounded. Gmel. Cayenne red-billed crow.

This is about the size of the Mistle-thrush, &c. eleven inches in length. The bill is an inch and a half long, and curved, the colour red, and resembling fine sealing-wax; the legs are dusky; claws black. The native place of this bird is uncertain; it is supposed to be Cayenne.


Inhabits the Helvetican mountains, and is about the size of a common hen. They build in rocks and ruined buildings. In Switzerland it is known by the name of Waldrapp, and Heusirapp. Linnaeus places this bird in the genus upupa. Briffon in that of coracias, and Barrere calls it a species of curlew. Gmelin and Latham refer it to the genus corvus.

**Corvus australis, Pelicanus earla de Linnaeus, the name given by authors to the bird commonly known by the name of the Cowanor, or cornorant, on account of its vociferousness, which is owing to a great quantity of small worms filling its intestines, and causing a very sudden movement. This bird has a rank smell, d'agreement, and hoarse, croaking voice. It is of the size of a goose, and is of a very deep dullish brown on the back, with some admixture of a greenish gloss, and white on the belly and breast. It builds not among rocks, but often also on trees. These birds have been trained to fish, and are used by the Chinese for this purpose.**

Dr. Porterfield, (Treatise on the Eye, vol. ii. p. 265.) observes that the crystalline humour in this bird, and in other
other animals that dive in pursuit of their prey under water, and that should see both when in water and upon land, is of a middle figure betwixt that of a lens and a globe; but this figure, it is evident, must reflect the rays too much when upon land, and too little when in water. However, as they possess the power of changing the conformation of the eye, they are enabled to see distinctly enough both on land and in the water. Thus the cormorant is able to pursue its prey under water with such nimbleness and activity, and for a long time, till at last it catches it with surprising dexterity; hence, after putting an iron ring at the bottom of its neck, so that the fish, being received into the oesophagus, which is very large, may not descend into the ventricle; it is frequently employed in fishing, and is said to afford a very agreeable diversion. After it has feized the fish, it is said always to throw it up into the air, and to catch it again by the head, as it falls down, so that it may swallow it entire, or without loss of time; but, because of the ring about its neck, the fish gets no further than its gullet, which, being large and yielding, stretches into a large pouch or bag, in which the fish remain, till the bird is forced to come to land and to throw them up entire. The Greenlanders eat its flesh, clothe themselves with its skin, and use the bag under its throat for a purse. See Pelicanus carbo.

Corvus aquaticus, the water-raven, is also a name given by some authors to the acaecatolus, the Mexican Ibis of Latham, and the Tantalus Mexicanus of Gmelin, which fee. It is a very beautiful Mexican water bird, of a shining greenish, purplish hue. It feeds on fish, and is eaten, but is of a coarse and fishy taste.

Corvus aquaticus minor, by a name which Mr. Ray has very properly called a bird common on our northern coasts, called there the fluffs, and in some places the crane, the Pelicanus Graculus; which fee.

Corvus bengalenus, the Bengal roller of Latham, and the Coracias bengalenis of Gmelin. See Coracias.

Corvus corninus, a name by which some have called the Indian raven, with the horned beak, more usually called the Rhinocerus bird, which fee. This is a species of Bucores.

Corvus eugyntus of Hasseliquil, an Egyptian bird of the size of the lark; the Egyptian Grackle of Latham, and the Gracula Athits of Gmelin, which fee.

Corvus fluviatilis, the river-raven, a name given by some writers to a very remarkable bird of the Philippine islands, resembling the common raven, but being of the amphibious kind. It is called in the language of the place cufitis, or Cebculo.

Corvus Indicus, the name of a bird of the raven kind, very common in the Molucca islands, very large, and armed with a very strong beak and claws; it does not feed on carrion, as our raven, but eats the nutmegs, and does vast damage in destroying that fruit. Its flesh is very delicate, and has plainly the aromatic flavour of its food; this is the Indian Hornbill of Latham, the Hydrocorax of Brisson, and the Buceros hydrecarax of Gmelin.

Corvus Paradisi, the Paradise fly-catcher of Latham, the pied-bird of Paradisi of Edwards, the Mucicapa Paradisi of the System. Nat. and the Tudor's Paradisi of Gmelin.

Corvus Ruficollis of S. G. Gmelin, Corvus infaustus of Fn. Suec, Merula fauclis of Gefner, Ray and Brillon, the greater Redstart of Albinus and Willughby, and Rock thrush of Latham, is the Landus infausus of Gmelin; which fee.

Corvus sylvaticus, the wood-raven, the name of a bird described by Gefner, and supposed by Mr. Willughby to be no other than the coracias or pycrocorax, the Corvus gra-
culus of Gmelin; but, if rightly described, it differs essentially from that bird in size, and in having a crest on its head. Gefner says, it is of the size of the common hen; it appears at a distance of a deep black, but, when viewed nearer, and in the sunshane, it appears of a fine glossy green; its tail is short; its toes very long, and not webbed; and it has a crest on its head. It feeds on frogs, fish, and other small animals, and builds in the ruins of old buildings, and lays two or three eggs. They fly very high; the young ones are accounted a very well tasted food. This is the Corvus Eremita of Gmelin.

CORNWEN, in Geography, a neat town on the banks of the Dee, over which is a handsome bridge, at the extremity of Merionethshire, and close to the borders of Denbighshire, built on a rock at the foot of Berwyn hills. This was the territory of that renowned hero Owen Glendower, the formidable opponent of Henry IV. In the 14th century, those gigantic features still decorate the principal inn, and whose whole district yet bears the name of Glendwr-dwy, or the valley of the Dee. Near this town is the pass of Glyndyfis, over which the great Irish road is conducted with singular contrivance, so as to escape the danger and yet to follow the winding of the torrent that precipitates from the hills with great force. The lands about Cornwen are very fertile, and finely variegated with four deep and narrow valleys on each side, verging towards it, as the central point of a fane, while the naked and intervening hills gradually expand themselves before the eye till they are terminated by the horizon. Cornwen is remarkable for having been the place where the Welsh forces under Owen Gwyneddd stopped the invasion of Henry II. in 1161. At present it is a place of fashionable resort for anglers, who fish for trout, grayling, and salmon, etc., the whole parish of Cornwen contains, by the returns to the population act, 41 Gco., III., 251 houses, and 1369 inhabitants.

CORY, in Ancient Geography, the name given by Ptolomy to an island of the East Indian ocean, in the Arcarie gulf, N. of the isle of Taprobana.—Allo, a promontory of the peninsula on this side of the Ganges, called allo Colis, and opposite to the northern point of Taprobane. Ptolemy. The island is now called Ramankoll, or the temple of Rama. The ridge of rocks extending from this island to Marar, on the island of Ceylon, denominated Adam’s bridge, thoud be entitled, as Sir William Jones maintains, Ramah’s bridge; the present name of this promontory and island strengthen his remark, it being usual in the Oriental dialects to confound the D and R.

CORYBANTES, in Antiquity, priests of Cybele, who danced and capered to the sound of flutes and drums. See Crotalus. (Horace, lib. i. ode 16. ver. 8.) They inhabited mount Ida in the island of Crete, where they are said to have nourished the infant Jupiter, drowning his cries by the tinkling of their cymbals, so that his father Saturn, who had determined to devour all his male offspring, might not hear them. The account of them occurs under different names of Curces, Galli, and Idaii Dactyli, as well as Corybantes.

Catusius, in his poem called Atys, gives a beautiful description of them; representing them as madmen. Accordingly Massimus Tyrius says, that those poffessed with the spirit of Corybantes, as soon as they heard the sound of a flute, were seized with an enthusiasm, and lost the use of their reason. And hence the Greeks use the word xoprtatov, to corybantize, to signify a person’s being transported, or poffessed with a devil. See Enthusiasm.

Some say that the Corybantes were all eunuchs; and that
CORYCUM Antrum, in Ancient Geography, a cave or grotto on mount Parthenius, about 60 fladias from Delphi, on the ascent of the hill.

CORYCUM, or Corycetus, a small town in Asia Minor, in Ionia. Strabo says that Attalus Philadelphia fixed a colony here. This is supposed to be the same with CORYCUS.

CORYCUS, a town of Asia, in Cilicia, celebrated under the Roman emperors, who always kept a fleet in its port, which was considerable. The inhabitants of this city were governed by their own laws; and it was deemed an asylum to those who defected thither. It was episcopal according to the acts of the council of Constaninopolis, held here in the year 381.—Alfo, a promontory of Cilicia, situated E. of the river Calycadnus, and of the promontory Anmcurium, according to Strabo. This author adds, that the "Coryicum antrum" of Cilicia was situated at the distance of 20 fladae from the sea.—Alfo, a mountain of Asia Minor, in Ionia; which, according to Strabo, was very high, and had below it the port of Cyslyres, and that of Erythra.—Alfo, a port of Asia Minor, in Ionia, at the foot of mount Corycus.—Alfo, a town of Asia Minor, in Lycia, between Olympus and Phaselis.—Alfo, a mountain of the isle of Crete; and also a port of Ethiopia.

CORYCUS, whence Corycometia, among the Greeks, a kind of exercise with the hand-ball. The size of the ball, and the materials of which it was prepared, were adapted to the age and strength of those who used it. It was suspended from the ceiling, and thrown off with different degrees of force, so that on its return it might act with proportionate violence. It was recommended by the physicians as a salutary exercise. Hf. man.

CORYDALEPODIUM, in Botany, a name given by some authors to the delphinium, or larkspur.

CORYDALES, the twenty-eighth natural order of Linneas in the Systema Naturae, and the twenty-fourth of the Pothomalous Peculiarities. In the former it consists of the following genera: melianthus, epipedium, hypocoum, funaria, impatien, keottice, monotropa? utricularia? tropaeolum? pinguisula. In the latter: melianthus, moniera, epipedium, hypocoum, funaria, keottice, impatien, utricularia, calcolaria? pinguisula. Tropaeulum is removed to the order trichilae. Linneas acknowledges that he does not find in this order any common mark, much less a difference from the other orders; but observes, that they have a degree of brittleness or tendernefs differenct from all others, which, with their glaucous colour, indicates an affinity at first sight.

CORYDALIS, a name given by the old botanists to the genus funaria.


CORYDALLA, in Ancient Geography, a town of Asia Minor, in Lycia; called by Ptolemy Corydallus.

CORYDALLUS, a borough of Greece, in Attica, near Athens, belonging to the Hippothoide tribe.—Alfo, a mountain of Attica.

CORYLEUM, a village of Asia Minor, in Paphagonia; named Coryle by Xenophon.

Corymbifera, in Mythology, an epithet of Bacchus, in allusion to the ivy-leaves which adorned his crown, and because the ivy was sacred to him.

CorymBIFera, in Botany, milIIfolii umbella; Ra. See achillea macropylla.

CorymBIFeraae, the third natural order of the tenth class in the system of Julius. It consists of such dicotyledonous monopetalous plants as have perigynous flaminns, with the following distinguishing characters. Flowers either all flosculous, confining entirely of regular tubular florets; or radiant, i. e. with the florets of the disk regular, and those of the ray irregular, and lipped-shaped. The florets of the former are most generally all hermaphrodite; the inner ones are sometimes hermaphrodite, and the outer ones female or neuter; in a few inflorescences, the inner ones are simply male, and the outer ones female. The florets of the latter are never all hermaphrodite; but have often regular hermaphrodite florets in the disk, and lipped-shaped female, rarely neuter florets in the disk; sometimes male florets in the disk, and female fertile ones in the ray. Common corymex one or many-leaved, simple, or calycifl. or imbricate; generally

tubular-cylindrical, preflled close, and gusset-toothed at the tip; leaves roundish, heart-shaped, acuminate.” Willdenow notes that this is not, as Linnæus and other authors have supposed, a variety of the preceding species, since it contains the most striking character when raised from seed. Miller had already made the same observation, to which Dr. Smith, in his English Botany, has in some degree given his sanction. 3. C. americana. Wild. 7. Mich. Amer. 2. p. 201. C. americana folium; Wangel. Amer. 88. tab. 29. fig. 63. “Calyx of the fruit roundish-campanulate, larger than the nut; border dilated, toothed; leaves roundish, heart-shaped, acuminate.” A low shrub. Taken up by Willdenow from a dried specimen sent from Canada, which had not preferred its flaxis; but as he has applied the synonym from Michaux afo to the next species, and, by a strange inadvertence, has copied verbatim the specific character of that author under both, in the same page, and at the distance of only a few lines, further observation must determine whether they are really distinct. 4. C. repetita. Mart. 2. Hort. Kew. 3. 364. (C. americana; Poir.) “Stipula lanceolate; leaves oblong-heart-shaped, acute; bracteoles smooth; calyx of the fruit beaked.” Hort. Kew. “Stipula lanceolate; leaves cordate-acute; fruit foliar.” Poir. This species is remarkable for the length of the calyx, which, as in the foliar, continues to cover the fruit after it is ripe. It differs from the preceding, according to Poiré, in having the aments of the flowers, especially of the males, foliary. He believes the plant from which he formed his description to be the same with that of Atton, in the Hortus Kewensis; it was being cultivated in the garden of the museum of natural history at Paris, from seeds sent several years ago from England. A native of North America. 5. C. columnaria. Linn. Sp. pl. 2. Mart. 3. Poir. 2. Wild. 5. (c. bizzantina; Herm. Lugd. 94. Seb. Mot. 1. tab. 27. fig. 2. C. aculeata peregrina humili; Bauh. Pin. 478. A. pamullana bizzantina; Cluf. Hift. 1. 11.) “Stipula linear, acute; calyces deeply cut; fruit very large.” Linn. and Poir. “Stipula lanceolate-acuminate; calyx of the fruit double; outer one with many divinations; inner one with three; segments palmate; leaves roundish, ovate, heart-shaped at the base.” Wild. It differs from C. aculeata chiefly in its fruit, which is rounder, twice as large, and entirely covered by the calyx. A native of the country about Constantinople.

Corymbia, one of the names given to the isle of Rhodes.

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Corymbia, one of the names given to the isle of Rhodes.
rally many-flowered. Common receptacle naked, or hairy, or chaffy. Regular flowers most frequently quinquelabiate, rarely quadrolabiate, or trifid. Slutag-shaped florets entire, or toothed. Stamens in the female and neutral florets none; in the hermaphrodite and male ones five, rarely four; anthers united into a tube, very rarely distinct and approximate. Sigma a continuation of the style, without a joint. Double in the hermaphrodite and fertile female florets; simple in the male; simple or none in the abortive female ones. Seed naked or crowed. Styles generally herbarious, sometimes shrubby, or inclining to shrubby, almost always bracteate. Leaves in most cases alternate, in a few opposite. Flowers generally yellow, or purple; florets of the disk generally yellow; of the ray often of the same colour with the disk, but sometimes of a different colour.

Vaillant first called the flowers of this order Corymbiferous, because they most commonly form a corymb, sometimes widely spreading, and sometimes compact. They comprehend all the radiate, and many of the flocculous flowers of the Tourn areas, which Jullien affects not be rapaetid. Once genera in both are very near allied to each other, as bidens and verbena, anacystis and anethis, &c., and once flowers of both kinds are sometimes found in the same genus, as in tussilago, fenico, &c. They include all the compound flowers of Linnaeus, with the exception of the capitate and femi-flocculous, which compose the first two divisions in his natural order composite; and confute more or less of all the fix orders of his artificial class flavo-genaca.


CORYMBIUM, in Antiquity, an ornament of hair worn by the women. Its form was that of a corymbus.


Gen. Ch. Col. two-leaved, one-flowered, inferior, long; prismatic, fix-angular; leaflets eret, converging longitudinally, triangular at the back, truncated, oblyre three-toothed; with a calyce confounding of four or five very small leaves or scales. Cor. monopetalous, regular; tube very short; border with first floret belonging segments. Stamens five, simple, eret, attached to the tube; anthers oblong, eret, united into a hollow cylinder. Pyl. Germ within the calyx, inferior to the corolla, bifitate; style simple, eret; stigma biita. Peric. cone, except the unchangefl calyx (utile closely inveter the oevi, Gartt.) Seed bingle, oblong, almost the length of the calyx, covered with a wool refumbling down (crowned with a pithier-shaped chaffy calyx, Joff.)


Sp. I. C. fadbrum. Linn. Syll. Nat. 1. Mart. 1. Lam. 2. Wild. 1. Lam. II. PI. 733. fig. 1. Burm. aef. 185. tab. 50. fig. 1. (Dupleurofilla; Pink. alOn. 73. tab. 272. fig. 5.) "Leaves linear, channelled, nearly smooth; fleon, bractes, and calyces villous-teaflous." Root perrenial, with a thick, very woolly crown. Stem a foot high, reddish, cylindrical. Root-leaves slightly frizzled, shorter than the stem. Flowers purple, in very close, eret, terminal fawilacks, disposed in a corymb. 2. C. glabrum. Linn. Syll. Nat. 2. Mart. 2. Lam. 3. PI. 723. fig. 2. (Dupleurofilla; Pink. alOn. 73. tab. 272. fig. 4.) "Quite smooth; leaves sword shaped, flat, nerved." Crown of the root and base of the leaves very woolly. Stem nearly cylindrical, about a foot high. Root-leaves from seven to nine inches long, five or six lines broad. Stem-leaves short, acute, embracing the stem, a little villous at their
axils. Flowers are numerous falcate, which compose a loose, rather large, terminal corymb or panicle. 3. C. granimum; Lam. ill. Pl. 723, fig. 3. (C. filiforme; Linn. jun.?) “Leaves linear, nerv’d, quite sinu-th, erect; corymb smooth, stiff, and flat.” Crown of the root very woody. Stem eight or nine inches high. Reft-leaves a line, lined half broad, flatly channelled. Stem-leaves alternate, embracing the stem; upper ones gradually thickening into scale. Communicated to La Maree by Senneret. 4. C. villosum. Linn. jun. Supp. 392. Mart. 4. Willk. 4. "Vil-\[500\]lus-woolly; stem-leaves embracing the stem, awl-shaped; straight, flat." All the species are natives of the Cape of Good Ho\[500\]pe.

**Corymbus**, a corymb, (κορυμβος, or κορυμβος), a branch or cluster crowning the summit of a plant, is used by Linnæus to express a particular form of inflorescence, the definition of which is, "a spike whose partial flower-flats are gradually longer as they stand lower on the common stalk, so that all the flowers are nearly on a level." This is well exemplified in Spiraea opulifolia, a frequent shrub in gardens. Other examples of the same are found in the Tripterygium clasps of Linnæus, as the Wall-flower, Stock, Cabbage, etc. The flowers of the Mountain Ash, and of Yarrow, are also disposed in a corymbose manner, that is, they form a nearly level surface, though their various flasks spring from various points, and are consequently of different lengths. The flasks also in these last-mentioned plants are subdivided, constituting a compound corymbus, and differing from a cyme in not originating collectively from any general point of union. See Cyma.

The above definition, taken from Linnæus, implies that his own original character of a spike, which requires the flowers to be all sessile (without partial flasks) on one common stalk, was not observed even by himself. Nor indeed can it be rigidly adopted, for the lowermost flowers, even in a true spike, are often flaked, and all of them, though originally sessile, are liable to acquire flasks as they ripen their fruit. A corymb, however, after flowering, becomes a true racemus, or cluster. See Spica and racemus.

**Coryna**, in Ancient Geography, a town of Asia Minor, in Ionia, on the sea-coast, between Clazomenae and mount Corycus.—Alfo, a town of Peloponnesus in the Elide, at a distance from the sea. Ptolomy.

**Coryneum Promontorium**, a promontory of Asia Minor, in Ionia, being part of mount Mimas, which extended to far.


Gen. Ch. Cal. Perianth inferior, five-leaved; leaves oblong, concave. Cor. Petals five, roundish, narrowed at the base, erect. Nectaries five, petal-shaped, alternate with the petals, nearly the same length, but narrower; each with a globular gland at the base. Stam. Filaments five, awl-shaped, attached to the base of the petals; anthers oblong. Pj. Germ superior, globular; style short, stigmatic; stigma obtuse. Peric. Not club-shaped, with an oblong kernel.

Eff. Ch. Nectaries five, petal-shaped, alternate with the petals, glabrous at the base.


Sp. 1. C. unbracteflora. Linn. Sp. Pl. Mart. 1. Lam. 1. (Coddia panna; Rhed. Mal. 3. tab. 1. 12. Talipot; Knox Ceyl. Palma Montana; Rai. Hift. 1057.) Great fan-palm. "Fronds pinnate-palmate, platted; pedi-\[500\]oles ciliate-filipoda; spadix erect." Trunk fifty or seventy feet high, cylindrical, even-lurcaged. Leaves eight or ten at the summit of the trunk, fourteen feet broad, and eighteen long exclusive of the petiole, forming a fascicle or head of about forty feet in diameter, really pinnated, but the leaflets are spliced and joined together, about two-thirds of their length, as to appear palmate or fan-shaped, connected in their upper distal part by a thread. Spadix rising from the centre of the leaves, and in the space of three or four months growing to the height of about thirty feet, conical, entirely covered with close imbricated feals, or partial spathes, branched; branches simple, alternate, covered with similar feals; lower ones twenty feet long; the whole having the appearance of a magnificent chandlier.

Flowers white, in compound panicles, which proceed from the seales of the branches, feellie, several together, in cy-\[500\]ndrical pendulous spikes. They have fo strong and overpowering a feent, that the inhabitants frequently cut down those trees which grow near their houses, soon after the spadix begins to shoot. Fruit about an inch and half in diameter, exactly spherical, smooth and even, green, fheely, succulent, somewhat oily, and rather bitter; not eattable.

This palm does not flower before it is thirty-five or forty years old, and is above fourteen months in ripening its fruit, after the fift appearance of the spadix. The spadix then withers, and the whole plant presently perishes. A single tree produces more than twenty thousand berries. But though these are of little or no value, the tree itself is far from being ueflels. Its abundant pith, pounded in a mortar, is made into a tolerable kind of bread, and is very service-able in times of scarcity, when there is a failure of rice. The expressed juice of the tender branches of the spadix, is a powerful emetic, and is said to be beneficial to persons who have been bitten by serpents. A liquor is obtained from the unripe fruit, which soon condenfes into a concrete substance, and is medicinally preferred to facilitate the paf-\[500\]sage of a dead fetus. This drug is sometimes abused by unhappy females for the purpose of procuring abortion. But the leaves are of molt frequent use. One of them reduced to a roundish form by cutting off the expanding points of the leaflets, will shelter ten or a dozen men from a heavy rain, or the burning rays of the sun. They are sufficiently firm to be employed by the country people for the
the covering of their houses, and by the soldiers instead of canvas in the construction of their tents. They are also a kind of natural paper, which requires no previous process to fit it for use; and most of the books which are flown in Europe for the Egyptian papyrus, are composed of these leaves. The characters are cut by a sharp-pointed iron style, which, penetrating the epidermis, makes indelible marks on a very durable substance. A native of the coast of Malabar, the island of Ceylon, and other parts of the East Indies.

2. C. rotundifolia. Lam. 2. (Saribus ; Rumph. Amb. t. 42. tab. 8.) "Fronds orbicular, palmate-pinnate, plaited in a radiate form; petioles ciliate-spinous; pappides pendulous." This species was accompanied with the preceding by Linneus, in opposition to Rumphius himself, who thought his farinus distinct from the Codda-panna of the hortus malabaricus. Juffieu suspects it to be fo, and Loureiro has confirmed the opinion. But to put the matter out of doubt with European botanists, there is, or lately was, a fine plant of it in the imperial garden at Schoenbrunn, near Vienna, where it was seen by La Maree. It was then young, and had not begun to form a stem. Rumphius has given the following description of it in its state of maturity. Tree thicker and more lofty than that of the Areca. Leaves about ten, in a loose fascicle at the top of the trunk, three or four feet in diameter, plaited from a common centre, and diverging in all directions, till they form separate acute leaflets; petioles near six feet long, slightly channelled, bordered by small sharp teeth. Pedicelles or spadices several, rising from the midst of the leaves, about three feet long, pendulous, reddish. Flowers in compound racemes, or long panicles. Fruit spherical, scarcely the size of a pistil ball, at first of a beautiful orange colour, which soon becomes black. A native of the Molucca islands, where its leaves and pith are applied to the same purposes as those of the Codda-panna, on the coast of Malabar, &c. The leaves on account of their firmness and pliability are much used to wrap up fruit, tobacco, and other commodities.

3. C. minor. Mart. 2. Lam. 3. Jacq. Hort. 3. 8. tab. 8. (C. pumilla; Walter. Chamarops acutis; Michaux. Sabal; Adam. 495. Sabal Adansonii; Guer. 3b.) "Fronds palmate, fan-shaped, plaited, somewhat bifid; petioles not spinous."

A dwarf plant, with the habit of a Chamarops. Crown of the root thick, resembling a bulb. Leaves springing from the crown of the root, smooth, rigid, fratiated, plaited below, and separating upwards into fward-shaped, acute segments; petioles a foot or a foot and half long, even-furrowed, slightly channelled or flat above, round underneath. Spadix erect, two or three feet high, rising among the leaves from the crown of the root, clothed with mamman branched sheathing fpathes. "Flowers in panicked racemes, fellite, small, white, without fcent; germ trigonous, roundish; fyle conical, three-furrowed. Fruit about the size of a pea, of a sweet falk, smooth, black, not very fucculent. A native of marshy ground in Carthage. It flowered first in Europe, in the imperial garden at Schoenbrunn, in 1773. M. Guer. who has seen the plant flower and fruit several times in the botanic garden at Rouen, follows Adanson in making it a distinct genus, and gives the following as its essential character. "Flowers hermaphrodite; fpathes partial; flamenfis, free; filaments thickened at the base; germ three, coordinate; berries three, monoporous; two generally abortive; seed sowny; embryo lateral." According to this description, it differs from the preceding chiefly in the number of its germs and berries; and in the situation of the embryo, which is said by Gartner to be at the base of the feed in corphya. But as neither of the Ahtic plants have flowered in Europe, and have not been described from recent speciments by any modern botanists, it does not appear certain that they also have not abortive germs. And with respect to the situation of the embryo, we cannot think it sufficiently important to be admitted into a generic character. See Annals of Botany, vol. ii. p. 199.

**COR PHA**, in Ancient Geography, a mountain of India, near the Ganges, in which was a temple of Diana Orthia.—Allo, a mountain of Asa, in Syria, between Antioch and Bero; the Coryphaeus of Polybius.—Allo, a mountain of Asa Minor, in the vicinity of Cyrrhus.—Allo, an ancient name of Libya, a province of Africa.

**CORYPHAÉNÆ, in Ichthyology, a genus of the thoracic tribe. The fishes of this kind have the head flopping suddenly downwards; the Gill membrane furnished with five rays, and the dorsal fin extending the whole length of the bick.

**Species.**

**HIPPURUS.** Sea-green, spotted with orange; tail forked; dorsal fin with about thirty rays. Gmel. &c. Common corphya.

The Coryphaænæ genus is in general distinguished from the peculiar bristly of its species, none of which appear, however, in this respect to excel the present kind. The C. Hippurus grows to the length of three, four, or five feet, its colour a beautiful blue-green, glazed with gold on the back and sides, and becoming silvery towards the abdomen. The upper parts are marked with a number of round orange-coloured spots; the head large, but short and very much compressed; the lips strong, the mouth wide, and armed with four rows of teeth, which are small and incurved. The fins are green, with a tinge of yellow on the rays. When in the water, this fish appears gloated with the finest golden hue imaginable, and hence it obtains the name of doro in the Portuguese. But, on being taken out of the water, the beautiful combination of its colours, and golden splendour, gradually fade till the fish expiring, it becomes altogether of a cinerous cast, with scarcely a trace remaining of its original lustre. Our sailors call this brilliant fish the dolphin, but erroneously, the dolphin of ancient writers being of the cetaceous tribe of mammula. See Delphinus Delphis.

The Coryphaænæ hippocus is a fish of a strong and vigorous nature, swims with great rapidity, is extremely voracious, and is observed to be perpetually engaged in pursuit of smaller fishes. In the Mediterranean, Indian, and Atlantic seas, which it inhabits, this fish is often seen in large shoals following ships, and devouring, with avidity, any kind of food that may happen to be thrown over-board. Bloch affures us, on the authority of Father Plumier's manuscripts, that in the stomach of a corphya which he examined were found four nails, one of which measured more than five inches in length.


This kind is represented as a most beautiful fish, and as a species allied to the former, though it seems doubtful whether it be a distinct fish, or merely a variety. Marcgrave is the principal author who describes it. This writer informs us, that it is known to the Brazilians by the name of guaraçápena, that it grows to the length of six or seven feet, and is of a silvery-green colour on the head, and upper parts, and variegated with numerous blue spots of different sizes, all which are, however, very small, and that the belly is of a whitish colour. He adds, that it is a very swift swimmer, and is considered an excellent fish for the table.

Plumier.
CORYPHENA.


This elegant species is described on the authority of a drawing by Father Plumier, and, in compliment to whom it is named plumieri. According to this naturalist, the fish measures fifteen inches, or more, in length; in its general form, it is allied to the common corphene, but has the head longer in proportion. The usual colour is bright-yellow, with a silvery exit on the abdomen, and the back brown, variegated with numerous, and somewhat irregular, blue streaks disposed transversely: the fins are yellow, the tail crescent-shaped, edged with blue.


This is an American species; Cateley found it near the Bahama islands, and Plumier about the Antilles. It is easily distinguished from the other species by its uniform blue colour, the breadth of its body, and superior size of its scales. The head is very large, but short, and is covered with smaller scales than those on the body.


This species is described by Salvian as a small fish, scarcely exceeding a palm in length. The head is very large and compressed, as is likewise the whole body, which rises into an edge both above and below; the mouth is rather small, and furnished with sharp teeth, the four anterior ones of which are larger than the rest. The eyes are small and situated on the upper part of the head; the dorsal fin, which is of moderate breadth and red colour, spotted with blue, commences from the back of the head, and is continued nearly to the tail; the vent is placed nearer the head than the tail. The tail is broad, and nearly even at the tip. The general colour of this fish is reddish-yellow. It is a native of the Mediterranean, and feeds on smaller fishes and marine inlets.


The species pentadactyla is a native of the Chinese and Indian seas, and is known in the Molucca fishes by the name of *Pentadactyla monostigma,* and the Indian *Pentadactyla.* The usual length of this fish is about twelve inches; its habit is similar to the other species in having the head abrupt, and in being deep in proportion to its length, as well as greatly compressed at the sides. The species is of a gregarious nature, and is said by Renard to assemble in fish vast shoals about the Molucca islands, that it affords a branch of commerce among those people, almost as important as that of the cod-fishery among the Europeans. Valentine says the flesh is white, firm, and very flavoured.


Nearly allied to the common corphene, but is of a more compressed and lengthened form, and differs in the number and disposition of the teeth, which are very short, small, and acute, and stand apart from each other; the general colour is bright gold, the tail most repandent and richly glossed with this metallic luster: throat and breast silver; the back clouded with blue, with the rest of the body sprinkled all over with bright blue lenticular spots. This beautiful fish was observed by Commeron in the Pacific Ocean, and is described from the manuscripts of that navigator by Cepede.

Pomphilus. Black with small yellowish bands above the curved lateral line. Linn. *Striped corphene.*

This species is shorter and thicker in proportion than the common corphene, with the head smaller, the mouth more capacious, and the sides of the head marked with several small impressed spots. The lateral line is curved; the pectoral fins very sharp pointed, and the tail limbed slightly. Over each eye is a gold-coloured spot. The fish is a native of the Mediterranean and Atlantic seas.

Fasciola. Milk-white and silvery, with transverse brown circles running from the bands of the dorsal fin, generally colouring on the back, and disappearing on the belly. Pallas, &c.

The length of a specimen of this fish described by Pallas was only two inches, but this was supposed not to have attained its full size. The head is concave, flat above, with the eyes large, and the irides gold-coloured; mouth wide; tongue flat and smooth; gill-covers composed of two large rounded plates; lateral line straight; pectoral and ventral fins hyaline; dorsal and anal variegated by dusky bands; tail deeply furcated, and marked by a dusky crescent. It is a native of the seas about Amboina.

Veli sfera. Silvery-sable; dorsal and anal fins very large, and ventral very small. Gmel.

A small species first described by Pallas as a native of the Indian seas. The body is of a tapering form, and covered with eleven longitudinal rows of large thick fritated scales, each of which is marked at the base by a small-scarce emunct, and is emarginated at the tip. *Pittacus.* Lateral line intercepted; fins with longitudinal coloured lines. Linn. *Parrot corphene.*

Inhabits the American seas, where it was first observed by Dr. Garden, and communicated to Linnaeus. The head is finely variegated; the irides a flame-colour edged with blue. On the middle of the body towards the back is a rhomboid purple spot, accompanied by green, yellow, and blue variegations; the dorsal and anal fins are linear, the former commencing from the head, and reaching like the ventral fin to the tail, which is even at the extremity. The colours are evanescent, being observed to vanish as the fish expires.

Scombroides. Silvery; back blueish, with the dorsal and anal fin limned towards the tail. Cepede. *Le coryphene scombroides.* *Mackerel corphene.*

Described by Cepede from the manuscripts of Commeron, who observed it in the South Seas. Its size is between that of a mackerel and a herring; the colour bright silver, tinged with brownish-blue on the back and top of the head, but on the latter darkest, and tinged with golden. All the fins brown, except the ventral, which are white on the exterior sides, the pectoral slightly golden. The lower jaw is long. The tongue large, and shaped somewhat like the human nail, with a squarish rough bone in the middle. The gill-covers consist of two large, smooth, and rounded plates; and the lateral line is marked by several undulations, which decrease as they approach the tail. The dorsal fin reaches from the back of the head to the tail, and is scalloped towards the posterior part, so as to bear some resemblance to the small or spurious fins in the scombrel or mackerel tribe. Vast multitudes of these fishes were observed by Commeron to follow the French ships for many days together; they appeared to prey chiefly on young flying fishes, which he says at intervals sprang round the ships like many butterflies, and which they scarcely surpassed in size.

Linea. Head variegated with transverse coloured stripes. Linn. Lineated corphene.

This species inhabits the seas about Carolina; the head is naked and compressed; the two fore teeth in each jaw longer
COR

CORYPHÆUS, in Entomology, a species of secundus with a black thorax, and ferruginous body; found at the Cape of Good Hope. See SCARAEBUS.

CORYPHÆUS, formed from corypha, tip of the head, in the Ancient Tragedy, was the chief or leader of the company that composed the chorus.

The corphus looks for all the rest, whenever the chorus took part in the action, in quality of a person of the drama, during the course of the acts.

Hence corphus has passed into a general name for the chief or principal of any company, corporation, fact, opinion, &c. Thus, Epitaphs of Antochus is called the corphus of the council of Nica; and Cicero calls Zeno the corphus of the Stoics.

CORYPHANTA, in Ancient Geography, a town of Asia Minor, in Bithynia; destroyed in the time of Pliny.

CORYPHANTIS, or CORYPHAS of Pliny, a town or village of Asia, on the bank of the Gulf of Adramyttium.

CORYPHAS, a corphus on the western coast of the Peloponnesus, in Messenia, and near the island of Pylos, according to Pausanias. It is now called Cape Zancle.

Coryphaeus, a corphus on the western coast of the Peloponnesus, in Messenia, and near the island of Pylos, according to Pausanias. It is now called Cape Zancle.

—Allo, a town of Messenia, on the coast, where the above-mentioned promontory, St. E. of the island of Aetna. The inhabitants of Pylos retired hither after the destruction of their town; and hence Thucydides says, that Pylos was called Coryphasium by the Lacedeemians. —Allo, a town of the Peloponnesus, in the Argolid, according to Pliny. It was situated on the coast, between the isthmus of Corinth and the promontory of Scyllium.

CORYPHOLE, in Medical Writing, is used for the crown of the head, as also for the interior extremity of the fingers next the nails.

CORYS, in Ancient Geography, a river of Arabia, which discharges itself into the Erythraean sea.

CORYSTION, in Ichthyology, a name given by Klein to the yellow gurnard or Callionymus Lyra. See Lyra.

—Allo, a name given by the same author to the Trachinus Draco, or weever. —Allo, to the Cottus garments and feripus, and to the Trigla gurnardus, cucullus, and hirundo.

CORYTHENSES, in Ancient Geography, a people of the Peloponnesus, in Arcadia.

CORYVREKAN, in Geography, a gulf or bay between the island of Jara and Scabria, on the western coast of Scotland; with a dangerous whirlpool.

CORYZA, in Medicine, is that form of defluxion, or catarh, which is confined to the membranes lining the nostrils, and passages to the throat. It is commonly called a cold in the head. The symptoms of coryza have been already detailed under the head of CATARRH, as well as the cause and method of treatment. See that article.

COS, COUS, or COUS, in Ancient Geography, one of the Sporades, is reckoned by Pliny among the most considerable islands of the Egean, or rather Myrtos sea. It was formerly known by the names of Merope, Cympha, and Caris; and is now called by the Greeks Cor, by others Lanugo, and by the European navigators Stanacho, or Stancho. It was situated at a small distance from the coast of Caris. F. of the town of Cnidus on the continent S.E. of the island of Nisyros, to which, as Strabo says, it was once joined, and N.E. of that of Calymna, and 15 miles from Hahcarnus. It consists of about 250 stadia or about 75 miles, and Pliny...
makes it 100 miles. By modern measure, it is about 24
miles long, and 3 or 4 broad. The chief city of this island
was first called Altyoque, and afterwards Cos. Strabo
mentions a temple erected by the Coans in honour of
Aëthopius, the tutelary god of their island, and en-
riched with offerings and presents of great value; but the
chief ornament of the place was a Venus rising out of
the sea, done by Apelles, and deemed one of his best per-
formances. This admirable piece of sculpture was con-
veyed by Augustus to Rome, and dedicated to Caesar; Ve-
nus being reckoned the mother of the Julian family.
In confirmation of this isola, the Coans were eaus of Augustus
of a considerable part of their annual tribute. This island
was famous for a kind of fine flax, much valued by women
of distinction at Rome; for it covered them, as Vellinus Pa-
terculus says, and yet chewed them naked; and hence it has
been so much inveigled against by the Latin poets.
This island has been rendered singularly famous by the number of
illustrious persons which it has produced. Among these, we
may reckon Hippocrates, Senius, another celebrated phy-
ician, Ariston, a Peripatetic philosopher, and Apelles, the
cele-
brated painter. To these we may add, Silius, who is
said to have been feconl to Homer in his poetry and
in the records of the Trojan war, used by Homer. Before
the Trojan war, this island was inhabited by Greeks, a
colony of Doriants, from the continent. The government was
at first monarchical; as history mentions among its kings
Eurybius, contemporary with Hercules, Antiphas, and
Phippius, the two latter of whom are said by Homer and
Thucydides to have assailed at the siege of Troy. The king-
ly government was succeeded by democracy; and this, as
Aristotle informs us, by an anarchy, which was abolished
by some private persons, who, affuming the whole power to
themselves, governed with an absolute sway. Hippocrates
says, that the Coans refused tofuscour the messengers of Da-
rius and Xerxes; but Herodotus numbers the Coans among
the Greeks, who served as auxiliaries in the army of Xerxes.
In the 10th year of the Ptolemaic war, the city of Cos
was demolished by an earthquake; and soon after this cat-
nary, Altyqueus, the Lacedaemonian, invaded the island,
laid waste the whole country, plundered the city, the in-
habits having fled to the mountains, and then retired to
Caideus with an immense booty. When Mithridates com-
manded all the Romans in Asia to be massacred, the island of
Cos afforded them an asylum. However, Mithridates
soon after invaded the island, took the metropolis, and
ruaged its territory. The Coans, provoked by this outrage,
as soon as they saw Lucidus, Sylla's successor, off their coasts,
took up arms, expelled the king's garrison, and admitted
the Romans, by whom they were amply recompensed. The
Coans remained ever faithful to the Romans, and highly
contributed to several victories gained by their fleets. Ne-
evertheless, in the reign of the emperor Claudius, they, like
the other Greek states, paid an annual tribute to Rome,
which this emperor remitted, in compliance with the requet
of Xenophon, his physician. This immunity they enjoyed till
the reign of Vespasian, who, reducing them to a Roman pro-
vince, exacted the same tribute from them as from the other
Asiatic islands. The soil of this island is fertile, and produces a
great variety of fruit: it is now covered with groves of le-
mon trees, and it has an oriental plane tree of very large size.
Its chief trade is in oranges and lemons: from this island
was first derived the name and substance of the whetstone:
and Cos is the residence of a Turkish bachi. The knights of
Rhodes found in this island a small city or town, near the sea,
at the bottom of a large bay, and at the foot of a high
mountain. The haven was then commodious and wide;
but its mouth has been so choked with the sand thrown
into it by the waves, that none but small vessels can put into
it, while those of larger bulk are obliged to ride in the
road near it, where they have a good bottom and an-
chorage. On this island the great master caused a strong
castle to be built, and then left it under the government of
one of the knights, who hid the foundation of commerce in
the island: and this gradually became so considerable, that
the town flourished, and was regarded as a seconl Rhodes;
so that it was railed to the dignity of a bishop's see under
that of Rhodes, and erected into one of the bailiwicks of
the order. For a further account of its present state, see
Stanchio.

Cos, a town of Egypt, Steph. Byz.-Afio, an ille
of Egypt, over against the town of Cynopolis. Ptolem

Cos, chalftone, in Natural History, a genus of sand-stones,
containing of fragments of an indeterminate figure, sub-
opaque, and granulated. There are several species of this
genus, which are used for mill-stones, &c. See Sand-
stones and Whetstones.

COSA, or COSSA, in Ancient Geography, a town situated
on a small island, which joined the ancient mountain Ar-
gentarius, mount Argentato, in which place Jupiter was
worshipped. Rutillus, in his Itinerary, says, that it was de
erated by rats, and on this account was abandoned by its
inhabitants. Its port, situated to the south, was called
"Portus Herculis," porto Ercole. This town was munici-
pal and a Roman colony: it was treacherously surrendered
to Hannibal. During the troubles in the time of Sylla, it
was besieged and taken by that general.

Cosa, or Kofa, in Geography a river of Asia, equal to
the Rhine, which rises in the mountains of Thibet, and
which once ran by Furneath, and joined the Ganges oppo-
site to Rajemal; but its junction is now 43 miles higher up;
almost opposite to Bogipour.

COSACKS. See COSSACKS.

COSALE, a town of Naples, in the province of Abruz-
zo Citta; 6 miles S. E. of Civita Borda.

COSAMBA, in Ancient Geography, a town of India, on
this side of the mouths of the Ganges. Ptol.

COSARIA, in Botany, Fork. See DORSTEIA
radinata.

COSCEZ, in British Antiquity, a distinctively a
plication given to a clafs of persons, who were original holders
of manors, and contradistinguished from Bordariz who were
holders of land by particular services, and who furnished
the master with poultry, eggs, &c.; Calibern, who were a band
of freedmen, of a particular clafs, and were made free by one
and the same master; and Villani, the originals of our present
copy-holders, who held their lands by perform-
ing the services of husbandry on their lord's demeine,
which were, in aftertimes, commuted for what is now called a
quint-roy; and Cotarita, who held by a free foeage tenure,
and were afterwards known by the title of "Sockmen," a
kind of farmers, who provided wheat for their respective
lords. Some of our antiquaries have considered Coscez and
Cotarita, as synonymous terms; and have claified them un-
der one and the same denomination of cottagers. But they
were evidently different, and erroneously claified under the
simple name of cottager. The Coscez, as distinguished from
the Cotarita, or as they are sometimes called Sokker, i.e.
Couches, from the French verb coucher, were obliged to
furnish the lord and his retinue with lodging, whenever they
might choose to demand it. This particular privilege of
the lords of manors is, in the feudal law, pointed out by the
term
COS

COS

term Coshering, (i.e. couching, couchant, Fr.) The word Coser, or Coset, was, therefore, apparently, chosen to distinguish such people from the tenants, who were merely required to furnish provisions for the use of the lord.

COSCINIA, in Ancient Geography, a village of Asia Minor, situated on the side of the Meander, according to Strabo. Pliny calls it Cossinia, and places it in Caria.

COSCINOMANCY, the art of divination, by means of a sieve.

The sieve comes from ἀξανον, eiretrum, a sieve, and µανθανειν, to learn.

The sieve being suspended, after rehearsing a formula of words, is taken between two fingers only; and the names of the parties suspected, repeated: he at whose name the sieve turns, trembles, or flashes, is reputed guilty of the evil in question.

This must be a very ancient practice: Theocritus, in his third Idyllon, mentions a woman very skillful in it. It was sometimes also practised by suspending the sieve by a thread, or fixing it to the points of a pair of scissors, giving it room to turn, and naming, as before, the parties suspected; in which last manner, eiretrium is still practised in some parts of England. It appears from Theocritus, that it was not only used to find out persons unknown, but also to discover the secrets of those that were known.

COSCOROBA, in Ornithology, a species of Anas, with the end of the beak dilated and rounded, and a white body. Its beak and legs are red, and its eyes very black.

It is found in Chili.

COSCYLIUM, in Natural History, a name given by some of the old writers to the kermes, the true nature of which they did not know, but supposed it to be a sort of leprous excrecence, formed of the abundant juices of the tree, and of the nature of the galls on the oak, and other trees.

CO-SECANT, in Geometry, the secant of an arc, which arc is the complement of another arc to ninety degrees.

COSEDA, in Ancient Geography, a town of Gaul, in Lyonnais Secundus; placed by d'Anville on the sea-coast, N. of Conflantia.

COSEL, in Geography, a town of Prussia, in Upper Silesia, situated in the principality of Oppeln, not far from the Oder. After the great Frederic had wrested Silesia from the house of Austria, Colaf was strongly fortified; yet, in 1745, the Austrians took it by storm, but were soon driven again from the place by the Prussians. In the year 1758, Cofel was for a long time blockaded by the Austrians, and in the short war of 1806 and 1807, it was one of the few Prussian fortresses, which were able to defend against the French and their allies. Colonel Neumann, who commanded in the place, was raised to the rank of major general, but died soon after his promotion. A few months after the Peace of Tilsit, the king of Prussia publicly expressed his satisfaction at the gallant conduct of the garrison of Cofel by sending the Order of the Red Eagle to prince Pierron of Courland, and the order pour le mérite to captains Capfni, Wofzowski, and Lehman.

COSEL, or Cosel, is also a small town of Denmark, in the duchy of Silesia.

COSENAGE, or Cosenage, in Late, a writ that lies where the trefal, that is, the trivias, the father of the belfast, or great grandfather, being feized in fee at his death of certain lands or tenements, dies; a stranger enters and abates; then shall his heir have this writ of cosenage; the form of which fee in Fitzc. Nat. Bro. fol. 221. See Asise de Mort d'Ascotlor.

COSENING, an office whereby any thing is done descriptly, in, or out of, contracts, which cannot be finely termed by any especial name. In the civil law, it is called stellonate. See Stellonate.

COSENZA, in Geography, a city of Calabria Citera, pleasantly situated, about 12 miles from the Mediterranean sea, at the southern extremity of a spacious plain, which, with a considerable breadth, extends above 20 miles down the course of the river Crati. The city, now the S.E. of an archbishop, and residence of the governor of the province, stands upon few hills, which form part of its armsorial coat. The metropolitan church is the only church within the walls; but in the faubourgs there are three parish churches; and there are twelve convents. The environs are beautiful, populous, and well cultivated, producing abundance of corn, fruit, wine, oil, and silk. From the situation of the low grounds, which are very fertile, and from frequent waterings, they exhale vapours in summer that constitute a "Mal Aria," very productive of fevers. Cosenza was anciently the capital of the Bruttian State, and of some consequence during the second Punic War. In the tenth century it was reduced to ashes by the Saracens, but by the munificence of its prelates it soon recovered from the calamity. The attachment of the natives to the Angevine family, the descendants of Lewis III. of Anjou, who died here in 1434, and to the French cause, excited the vengeance of the Aragonian party, who committed shocking outrages at Cosenza in the year 1457. Earthquakes have been very destructive in this place. The number of its inhabitants has been variously stated to amount to 18,000; but from Mr. Swinburne's information, it does not much exceed 9,000. It is distant 145 miles S. E. of Naples. N. lat. 39° 22', E. long. 16° 22'.

COSETANI, in Ancient Geography, a people of Spain, S. E. of the Lacetani. Their principal town was Tarrau.

COSF, in Geography, a town of Asia Minor; 36 miles S. of Bazzad.

COS, in Agriculture, is a term signifying the fame as pod, or the capsule which contains the seed in many sorts of plants, especially those of the leguminous kind. See Pop.

COSHERING, in the Feudal Cassetons, a kind of right of the lords to lie, and, as some say, leaf themselves, and their followers; at their tenants houses. See Coscez.

COSHERING, in the history of Ireland, means visitations and progresses made by the lord and his followers among his tenants, which were very grievous to the latter, and with other exactions made the lord an absolute tyrant, and the tenant a very flave. Ledwich.

COSIA DI DONNA, in Geography, a small island near the west coast of Sardinia; 6 leagues W. W. S. W. of Bosa.

COSILAUS, in Ancient Geography, a village of Palestine, not far from the town of Challecon; called Coelas by Sozomen.

COSILNUM, a place of Italy, in Lucania, forming a part of Magna Graecia. It was situated towards the N. W. and separated from Campia by the mountains.

COSIMO, Pietro da, in Biography, a painter, born at Florence, in the year 1441. He was the scholar of Cofimo Roffelli, whom he attended to Rome, where, by the advances he made in his profession, he acquired the favour of the pope, and was employed some years in the Vatican. He painted both history and portrait. His colouring is good, but though his figures have much spirit, his design was not always correct, and though highly spoken of by Vafarli, his celebrity is perhaps principally owing to his L. 2 having
COS

having been the master of Andrea del Sarto. Amongst his small pictures, which are his best performances, the story of Herakles in the gallery of Florence is worthy of notice. Towards the close of his life he amused himself by painting monsters, such as harpies, satyrs, &c. and died in 1524. Vafari. Lanzi. Stor. Pittor.

COSIN. John, was born at Norwich, of respectable parents, in 1554. Here he received an excellent grammatical education; and at an early age was admitted at Caius college, Cambridge, where he took his degree in Arts, and was appointed Fellow. Before he was twenty years of age he was made secretary to the bishop of Litchfield and Coventry, and, in 1619, he was appointed domestic chaplain to Dr. Neile, bishop of Durham, who eventually conferred upon him a prebend: which was but prelatory to additional rank and honour in the church. He was the friend of Laud, and was supposed to have a strong tendency to the doctrines and discipline of popery. "A Collection of private Devotions," published by Mr. Cofin in the year 1627, led many persons to suspect, that he had no particular pietry for the church, of which he was a member, and this suspicion was strengthened by the part which he took in the prosecution of Mr. Peter Smart for his discourse preached against the advances towards popery. This was in the year 1628, about which period he took his degree as doctor in divinity. In 1634, he was elected master of Peterhouse, and, in 1640, were delegated to him the high offices of vice-chancellor of the university; dean of Peterborough, and chaplain to the king. He had now attained to great rank, but probably not to the acme of his wishes, when a reverse of fortune was referred for him. The prosecution of Smart was not forgotten, and upon a petition complaining of Dr. Cofin’s superfluous and innovations in the church of Durham, the house of commons not only subjected all his benefices, but preferred against him, before the upper house, an impeachment, containing twenty-one articles. Of these charges he vindicated himself and was acquitted; but, as in other cases of a similar nature, the prectors never thought of making him any compensation for the various injuries which he had sustained by imprisonment and loss of property. The spirit of Dr. Cofin was however unbroken, and, in 1642, he was concerned with others in sending the plate, belonging to the university of Cambridge, to King Charles, who was then at York. For this he was by parliament declared incapable of holding any ecclesiastical prebends, and lost his situation as master of Peterhouse. Fearing that the remembered of the government might be carried farther, he left the kingdom and fought for safety in Paris. Here, when reduced to considerable difficulties, he exhibited a strict regard for the protestant religion, and rejected certain handsome offers which were made to him, to unite with the Catholics of that country. He formed a congregation of English exiles, in which he kept up the English church discipline, and the form of worship appointed in the Common Prayer. On the restoration of Charles II., Dr. Cofin returned to his native country, where he was reinstated in his former prebends; and as a reward for his tried attachment to royalty, he was, in the year 1660, elevated to the rich see of Durham. After this he took little if any share in the politics of the day, and was distinguished for his moderation and benevolence. He died in the year 1671, 2 of the year of the world, having entered his seventy-eighth year. He had written many books, chiefly on controversial points of theology, the enumeration of which would not interest our readers. His character for integrity and independance was fully established as well by active zeal, as by a readiness to suffer in defence of the cause which he had espoused. Biog. Brit.

CO-SINE, in Geometry, is the right side of an arch, which is the complement of another to 90 degrees.

COSINISSA, in Geography, a small island in the Greek Archipelago. N. lat. 36° 36’. E. long. 25° 42’.

COSINTUM, in Ancient Geography, a town of Thucina between Toporiss and Pyrobalus, according to the Itinerary of Antonine.

COSI, in Geography, a town of European Turkey, in the province of Bulgaria; 52 miles S.S.E. of Silistria.

COSLIACO, a town of Austrian Iliria; 12 miles W. of St. Veit.

COSLIN. See CoS LIN.

COSMAS, in Biography, an Egyptian merchant, who, under the emperor Julianus, in the course of his traffic, made some voyages to India, about the year 522, whereas he acquired the surname of "Indicoptolus," or the Indian navigator; but afterwards, by a transition not uncommon in that superfluous age, renounced all the concerns of this life, and assumed the monastic character, as it is said, among the Netherians. In the solitude and liceur of a cell, he composed several works, between the years 535 and 547; one of which, dignified by him with the name of "Christian Topography" has reached us. This book was published at Alexandria, A.D. 547; and some curious extracts of it may be found in Photius (Cod. xxxvi. p. 9, to. edit. Huthchel). Thevenot in the 1st part of his "Relations des Voyages, &c." and Fabricius (Bib. Grac. l. iii. c. 25, tom. ii. p. 617). The entire work has been published by Father Monfaçon at Paris, A.D. 1707, in the "Nova Collectio Patrum" (tom. ii. p. 115—344). The main design of this work is to combat the opinion of those philosophers, who affirm that the earth is of a spherical figure, and to prove that it is an oblong plane, 12,000 miles in length from east to west, and 6000 miles in breadth from north to south, surrounded by high walls, covered by the firmament as with a canopy or vault; that the vicissitude of day and night was occasioned by a mountain of prodigious height, situated in the extremities of the north, round which the sun moved;—that when it appeared on one side of this mountain, the earth was illuminated; when concealed on the other side, the earth was left involved in darkness. However, amid these wild reveries, more suited to the credulity of his new profession, than to the sound fenfe characteristic of that in which he was formerly engaged, Cosmas seems to relate what he himself had observed in his travels, or what he had learned from others, with great simplicity and regard for truth. He appears to have been well acquainted with the well-coast of the Indian peninsula, and names several places situated upon it: he describes it as the chief seat of the pepper trade, and mentions Mala, probably the origin of Malabar, as one of the most frequented parts on that account. From him also we learn, that the island of Tapanbo, which he supposes to be at an equal distance from the Persian gulf on the west, and the country of the Sinse on the east, had become, on account of this commodious situation, a great staple of trade; that into it were exported the silk of the Sinse, and the precious spices of the Eastern countries, which were conveyed thence to all the parts of India, to Persia, and to the Arabian gulf. To this island he gives the name of Sedeleiba, nearly the same with that of Selendib, or Scendeib, by which it is still known over the East. To Cosmas we are also indebted for the first information of a new rival to the Romans in trade having appeared in the Indian seas. All the considerable ports of India were frequented by traders from Persia, who, in return for some productions
productions of their own country in request among the Indians, received the precious commodities, which they conveyed up the Persian gulf, and by means of the great rivers, Euphrates and Tigris, distributed them through every province of their empire. As the voyage from Peria to India was much shorter than that from Egypt, and attended with less expense and danger, the intercourse between the two countries increased rapidly. Cosmas mentions a circumstance, which is a striking proof of this fact. In most of the cities of any note in India he found Christian churches established, in which the functions of religion were performed by priests ordained by the archbishop of Seleucia, the capital of the Persian empire, and who continued subject to his jurisdiction. Accordingly we learn from this traveler, that Christianity was successfully preached to the Barbarians, the Huns, the Persians, the Indians, the Persarmians, the Medes, and the Elamites. The coast of Mahabar, and the islands of the ocean, Socotora and Ceylon, were peopled with an increasing multitude of Christians. It is remarkable, however, that, according to the account of Cosmas, none of these strangers were accustomed to visit the eastern regions of Asia, but were satisfied with receiving their silk, their spices, and other valuable productions, as they were imported into Ceylon, and conveyed thence to the various marts of India. Cosmas published also "A Cosmography of the southern parts of Africa. &c." "Altronomical Tables," and "A Commentary on the Song of Songs." Robertson's Historical Disquisitions concerning Anc. India, vol. 2. Gibbon's Hist. of the Rom. Emp., vol. vii. and viii.

COSME, or COSM, FRERE JEAN DE ST, a monk of the order of the Feuillans, in Paris, famous for his skill in lithotomy, was educated to the practice of surgery; but losing his father, under whom he had been instructed, at an early age, he retired from the world, and became a monk. Here, however, he continued improving himself in the art to which he had been bred, giving his assistance to all who applied, without receiving any compensation, but the thanks of the persons he relieved. The instrument with which he performed the operation for extracting stones from the urinary bladder, he called " lithotome cachet," a hollow tube, in which was concealed a knife, with which he cut through the prolate gland, into the bladder. His care was to make the wound sufficiently large, to enable him to extract the stone easily, and without bruising the parts. To this, it is probable, his success, far superior to any of his rivals, must be attributed. The fame he acquired drew upon him the envy of the surgeons of Paris so far, that they are said to have applied to the king to interdict his practicing. Not succeeding in this attempt, Monf. Le Cat published "Lettre au Sujet du Lithotome Cachet, &c. contra F. Cosme Difert," 1749. Cosme's dismemberment, describing the operation, had been published the preceding year, in the "Journal des Savans." This produced an answer from De Cosme, under the title of "Recueil des Pieces importantes fur l'Operation da la Taille," Paris, 1751; in which he acknowledges some failures of success, and that he had lost one patient by hemorrhage; but challenges his adversaries to produce lists of successful cases equal to his, which, if so, they were not able to do. That his success was rather owing to his adroit manner of performing the operation, than to the excellence of his instrument, is more than probable, as on his death the instrument soon fell into disuse. He has the credit of having made some improvement on the operation for extracting, instead of depressing or coughing, cataracts. For the titles of the several rejoinders, explanations, &c. of Le Cosme and his opponents, see Haller's Bib. Chirurg. One of Le Cosme's controversial pieces is dated 1763, which, as he was born in 1703, shows that his life was protracted to sixty years; how much farther we have no opportunity of knowing.

COSMEA, in Botany, Wild. 1537. (Cosmos; Cav. l. c. 1.) Clais and order, Jungenia polygonia fruticosa.

Gen. Ch. Common calyx double, both one-leaved, eight-cleft, permanent. Receptacle chaffy. Flores of the disc numerous, tubular, hermaphrodite; of the ray ligulate, three-toothed, female, barren. Steds tetragonal, crowned with three or four recurved awns.

It differs from coreopsis in the structure of the calyx.

S. 1. C. sulphurata, Wild. p. 379. (Cosmos sulphureus; Cav. 1. 156. tab. 79.) Coreopsis artecorne folio; Cav. 1. tab. 553.) "Leaves bipinnatisect; segments lanceolate; segments of the outer calyx lanceolate." Root annual. 2. C. bipinnata. Wildl. 2. (Cosmos bipinnatus; Cav. 1. 10. tab. 14.) "Leaves bipinnatisect; leaflets linear-awl-shaped; segments of the outer calyx egg-shaped." Root perennial. Stem three or four feet high, cylindrical, branched near the top. Flowers large, with a yellow disk, and deep purple or dark rose-coloured ray, foliary, axillary, and terminal, on long peduncles. 3. C. parvisora. Wildl. 3. (Coreopsis parviflora; Jacq. Hort. Schoenb. 3. 65. tab. 574.) "Leaves bipinnatisect; leaflets filiform; segments of the outer calyx lanceolate." Root annual. Outer calyx longer than the inner. Ray of the flowers white. All the three species are natives of Mexico. Willdenow affords the florets of the ray in the first species are fertile.

COSMETIC, from κοσμος, to adorn, a term in Phytc, used for any medicine, preparation, or means, employed to beautify and embellish the face, and preserve and improve the complexion: as corsets, and the whole tribe of fucuates, wafhes, cold creams, lip-salves, &c. See Water.

The Indians use the water of green cacao-nuts as a grand cosmetic, which wonderfully improves their complexion.

COSMI, in Ancient History, magistrates of Crete, during the period of its republican government, next in authority to the senate, and to called from the Greek word κοσμος, signifying order; these magistrates being appointed for the maintaining of good order in the state. Their power was much the same with that of the ephori at Sparta: they were ten in number, and, like the ephori, chosen out of the body of the people; the meanest of the populace having an equal right to this dignity with the most illustrious families of the republic. They were intended as the balance between the people and the senate, and a check upon both; for, without their approbation, no decree was of any validity. Out of their body the senators were chosen; none being admitted to that office who had not before given some proofs of their prudence, equity, and disinterestedness, in the college of the cosmi. In time of war, they commanded the armies of the republic with absolute power, but were afterwards liable to be called to an account; whereas the senators were not accountable for their administration. See Cretan.

COSMICAL, something that refers, or has a relation to the world; in Greek κοσμικός.

COSMAL ASPECT, among Astrologers, is the aspect of a planet with respect to our earth. See Aspect.

COSMICAL QUALITIES are used by Mr. Boyle in the same sense with syllemaatical ones.

Though, in considering the qualities of natural bodies, we usually only take in the powers any particular one has of acting on, or its capacity of suffering from the action of another, wherewith it is observed to have some manifest commerce, by a communication of impressions; yet there may be...
COS

be several alterations to which it may be liable, not barely on account of those qualities presumed to be evidently inherent in it, nor of the respect it bears to those other particular bodies, whereof it seems manifestly related; there may be many unheeded agents, which by unperceived means have great operations on the body we consider, and work such changes as, as are not otherwise to be accounted for.

And the author of the poetical riddles of a star.

A star is said to rise cosmically, when it rises together with the sun; or with that degree of the eclipse wherein the sun then abides.

Cosmical setting is, when a star sets and goes down in the east, at the same time the sun rises in the east.

But, according to Kepler, to rise or set cosmically is only to attend above, or descend below, the horizon.

COSMEN, or Kosmin, in Geography, a town of Poland, in the palatinate of Kalisch; 16 miles S.W. of Kalisch.

COSMO I. in Biography, grand duke of Tuscany, son of John de Medici, born in 1519. On the assassination of Alexander, he took such measures as caused himself to be unanimously elected chief of the republic. A party, headed by some perfons of high rank, was formed against him, but Cosmo was supported by the power of Charles V., and firmly fixed on his throne. To strengthen his hands he married Elena de Toledo, daughter of the victory of Naples. In 1523 the Sienese revolted from the emperor; the malcontents were afflicted by France, but Cosmo joined the imperialists, and triumphed over all opposition. Siena surrendered to his power, and with the adjoining district was annexed to the Florentine dominions. He instituted the military order of the knights of St. Stephen for the defence of the coast, and allotted to them a palace at Pisa. Conspiracies were formed against him by the high spirited Florentines, but he rendered himself superior in every struggle for power; in his own family, however, he was one of the mott unfortunate of sovereigns. He had a numerous offspring, but the fate of his two sons John and Garcia was truly tragical. John, at the age of 17, was raised to the dignity of cardinal; Garcia then but 15, jealous, probably, of the high honours conferred on his brother, and poffling a cruel and malignant disposition, took an opportunity, while on a hunting party, to stab him to the heart; after which he joined the rest of the company with an air of perfect tranquility. The dead body was soon discovered, and the death of the youth was ordered by the duke to be attributed to apoplexy. He was, however, too wary to be deceived himself, well knowing by whom the bloody deed was done: and sending for Garcia charged him with the crime, which, though at first, he denied in the most peremptory manner, he at length confessed. The unhappy father, armed with arbitrary power, commanded his son to prepare for the punishment which he deferred, and, amidst all the fame instant, snatchig Garcia's dagger, the instrument of his guilt, plunged it into the criminal's bosom, and laid him dead by the corpse of his brother. Their mother survived the loss of her sons a few days only. Cosmo enjoyed the supreme power during a period of 58 years, and died in 1574, aged 55. The magnificence of his disposition, which has been greatly and justly celebrated, showed that he merited the crown which he wore. He is signified as an encourager of letters and the fine arts. He reformed the university of Pisa, invited to it professors of the first talents, and founded in it a new college for the education of forty students. Cosmo was the founder of the Florentine academy; made great additions to the Laurentian library, and laid the foundation of the famous gallery of Florence, at the same time furnishing it with the relics of antiquity, and the most precious works of art. By his encouragement which he offered, the most celebrated artists in every line crowded to his capital: here they were sure of employment, and of rewards proportioned to their merit. He engaged the ablest printers in the publications of important works. He founded the sciences of astronomy and navigation; and encouraged the arts of agriculture and medicine, which began to be studied on general principles; and at Florence and Pisa he laid out botanical gardens, and expended large sums in the prosecution of his plans. His own time was spent in the most useful and liberal studies, for which he had a great taste. In consideration of his munificence as a prince and patron of learning and learned men, he was, in 1569, created by pope Pius V. "Grand duke of Tuscany," a title which he conferred with his own hands. To this innovation several of the powers of Europe object at first, though, in a short time, they all acquiesced in it; and the honour descended to the successors of Cosmo, in common with their other titles.

COSMO II., son of Ferdinand I. and grandfon to the preceding, succeeded to the dukedom in 1609, and rendered himself illustrious by the equity and mildness of his government, and by his zeal in the promotion of literature and the fine arts. He was a capital economist, but without the liability of being charged with selfishness or avarice, and so well did he manage the public money, that in 1617 he was able to send an army of 20,000 men to the assistance of the duke of Mantua against Savoy, without laying a single tax upon his subjects. He died in 1621.

COSMO III., born in 1642, was son of Ferdinand II, whom he succeeded in 1670, and residing to the house of Austria in opposition to that of France, he obtained from the emperor the title of Royal Highness, which was confirmed by the pope, and, after some opposition, admitted by the other powers. In the year 1702 he went to Rome, and at the jubilee he expressed a vehement desire to touch the holy handkerchief, an indulgence which the pope refused to grant to any one who was not a canon of St. Peter's. Cosmo with hissedition entered into pitch's orders, obtained a canonry, and then was allowed what he so anxiously desired, together with the privilege of beholding his benediction upon the surrounding crowd. His part of his conduct has subjected him to reproaches either as a hypocrite, or a weak despot. His religion did not prevent him from attending to his temporal rights: but by strict economy and the taxes which he imposed on his people he was one of the richest princes of Europe. His liberality was by no means proportioned to his wealth; and after a long reign he died in 1723, having attained to the great age of 81 years. He was devoted to the chemistry of the day, and is said to have been pleased when his friends requested medicines made up at his own laboratory. Univer. Hist. Moreri.

COSMO. See Cosmas.

COSMOGRAPHY, or Phlegeton, signifies the science of the formation of the universe. The term is formed of cosmē, the world, and χρουμα, to form. It differs from cosmography, which is the science of the parts of the universe, supposing it formed, and in the state in which we behold it; and from cosmology, which reason on the actual and permanent state
of the world formed as it now is; whereas cosmogony reasons on the variable state of the world at the time of its formation. In our conjectures about the formation of the world there are two principles which we ought never to lose sight of. 1. That of creation; for certainly matter could not give itself existence, it must have received it. (See Creation.) 2. That of a supreme intelligence directing this creation, and the arrangement of the parts of matter, in consequence of which this world was formed.

Various opinions have been held both by the ancients and moderns concerning the origin of the universe, and the time as well as the manner of its formation. Although a brief abstract of these opinions will be found under the appropriate titles or apppellations of those by whom they were maintained, we shall in the sequel of this article give a connected summary of them, together with references to those heads or titles under which the particular detail of them occurs. These opinions may be comprehended under the three following distinctions: viz. 1. That the world is eternal, both as to matter and form: 2. That the matter of the world is eternal, but not the form: 3. That the world had a beginning, and will undergo a dissolution: being in its own nature perishable.

Ocelus Lucanus, whose antiquity and authority have been contested against those of Moles, though he lived in the age preceding that of Plato, was one of the most ancient assertors of the eternity of the world. In a book which he wrote "On the Universe," and which is still extant, he affirmed, that the universe never had a beginning, and never will have an end. Being incapable of generation or of corruption; that of itself it is eternal, perfect, and permanent for ever, and that the frame and parts of the world as well as the substance and matter of the whole, and all mankind, must necessarily be eternal. His arguments for this opinion are either very absurd and ridiculous, as when he attempts to prove, that the world must be eternal, because its figure and motion are both circular, and therefore without beginning or end; or else they are such as tend to prove, that something must be eternal, because it is impossible for every thing to originate from nothing, or to fall into nothing, alleging that since there is nothing exterior to the universe, it is a contradiction to ascribe to it a beginning, because it must have been produced by some other thing, and then it is not the universe. He himself however seems to be perfused that the necessity of existence must flow from an eternal and intelligent mind, the necessary perfections of whole nature are the cause of that harmony which subsists in the universe, and which prevents its disarrangement. He allows, that God has given to man faculties, organs of sense, and appetites, not for the sake of pleasure, but for final causes; and expressly affirms, that the ever-active being governs, and that the ever-pasive is governed; that the one is first in power, the other in concord; that the one is divine, rational, and intelligent, the other generated, irrational, and liable to change. See Ocelus Lucanus. Aristotle, who seems to have freely borrowed from the above work in his treatise "On Generation and Corruption," held the same opinion with regard to the universe; and he was the first, at least among the Greeks, who asserted it; for he says, (De Coelo. i. i. c. io.) that, before his time, the temporary production of the world was a tenet universally received, though it was a question whether it should ever perish or not. It was his doctrine, that not only the matter of the heavens and the earth was ungenerated and eternal; but that even mankind, and all the species of animals, male and female, have subsisted from everlasting to everlasting by a perpetual course of generation, without any original beginning or production; or that the earth has for ever been adorned with trees, plants, flowers, animals, and other productions as we now observe it. The great reason, which induced Aristotle to assert the eternity of the world, was his conceiving that there can effectually proceed from such an eternal cause as the divine mind, which, being altogether act and energy, could not rest in a state of inactivity. He acknowledged, however, (Metaph. i. i. c. 23.) that a spiritual subsistence is the cause of the universe, and the source of all the order and beauty, as well as of the motions and forms which we so much admire. And he expressly describes God to be an intelligent being (Nas.) incorporeal, the first mover of all things, himself immovable, eternal, indivisible, and definite of all quantity; and he affirms, that if there were nothing but matter in the world, there would be no original cause, but an infinite progression of causes, which is evidently absurd. However we may infer the true notion of this great philosopher to have been, that though the world had no temporary generation, yet it was produced from one Supreme Deity, after some other manner. (See Aristot.ale.) Although Plato himself acknowledged that the world was made by God, yet he used some expressions which intimated that the time of its formation was indefinite; such as when he says, that the world must be an eternal resemblance of the eternal idea; so that many of his followers, adhering to Aristotle's opinion, availed themselves of these expressions, and explained them as denoting, that by the creation of the world was not to be understood a creation in time, but only in order of nature, causality, and dependence; the will of God, and his power of acting, they lay, being necessarily eternal as eternal as his essence, the effort of that will and power must be supposed coeval with the will and power themselves. According to these philosophers, existence from eternity, and being caused or produced by another, were not apprehended to be contradictory or inconsistent. And as they were led into this opinion, from the sole consideration of the benevolent will and generative power of the Deity, they allowed that the world, notwithstanding its existence from eternity, might in some sense be said to be made, as being produced from another cause, and not self-originated. To this purpose, Proclus himself, the grand champion for the world's eternity, plainly acknowledges, that the generation of the inferior gods and of the world must be so understood; meaning, when they called it the generation of the gods, not any temporary production, but their inefable proceeding from a superior first cause (Procl. in Tm. p. 85. Codworth. p. 253.) The later Platonists, being fond of this notion of the eternity of the world, endeavoured, by forced constructions, to weld their matter's words, expressly his "Timaeus," to their own purpose. Accordingly this doctrine of the world's co-ternity with God was, in the 6th century, allowed to be publicly taught in Alexandria, by Ammonius the scholar of Proclus, and not without success. (See Plato and Platonists.)

Some modern assertors of the eternity of the world have ventured to affirm the material universe to be self-existent, and to be the supreme deity himself. This is the doctrine of Spinoza, the first, as it is supposed, who reduced Athemis into a fyltem, by regular deductions, after the method of the mathematicians. (See Spinoza.) However the fundamental opinion, on which Spinoza erected his fyltem, was not new; but others long before his time had led the way, though in some respects he departed from them. The opinion that the universe is one sublimage, and that God and
the world are one and the same thing, is supposed to have been first taught by X-nophanes, the founder of the sect afterwards called the Eleatic. He is said to have held not only the eternity and immutability of the world; but also, that whatever existed was one being; that there was neither any generation nor corruption; that this one being was immoveable, and remained always the same, and was the true God. This doctrine was not only defended by his successors, Parmenides, Melissus, and Zeno of Elea, but by Stilpo, and the Megarean philosophers also. (See the articles X-nophanes, Parmenides, Zeno, and Stilpo.)

Strato of Lampacus departed essentially from the system of both Plato and Aristotle; for though he made nature immate, and acknowledged no God but nature, yet it is not certain that he taught that the universe, or nature, was one simple being. His opinion seems to have approached much nearer to Spinoza than the corporeal system, which see. (See also the article STRATO.) Whatever was the real notion of this distinguished Peripatetic philosopher, and whatever difference subsisted between him and the Epicureans, it is certain, that Alexander the Epicurean, who is supposed to have been contemporary with Plutarch, maintained, that God was matter, or not distinct from it; that all things are essentially God, that forms are imaginary accidents, having no real existence; and that all things are substantially the same. This extravagant opinion was embraced by some heretical Christians; as by one Amalric in particular, whose dead body was taken up and burnt, in the beginning of the 13th century, for having taught, that all things were God, and that God was all things, and the essence of all creatures; so that the creator and creature were the same; and that God was the end of all things, because all returned into him. These sentiments were adopted by his scholar David of Dinant, and several others; and the learned Peter Abachard has been accused of holding the same opinion. This notion has not been confined merely to Europe, but has made progress in the East; among the Japanese and the Mahometans; and the dogma of the soul of the world, is not only common in the East, but prevailed among the ancients, forming the chief part of the Stoic system, though in reality it is the same with some schools of Spinoza, with that of Spurzheim, with that of heterodox Stoics, as in particular Boethius, not only denied the world to be an animal, or intelligent being; substituting in the room of its mind or soul a plastic nature; but they also affected the world's eternity and incorruptibility, or one constant and invariable cause or tenor of things. The elder Pliny seems to have been of this opinion; for he declares, that the world, and that which is also called heaven, by whose circular motion all things are governed, ought to be believed to be an immovable and eternal deity, such as was neither made, nor will ever be destroyed. (Nat. Hist. I. ii. c. 1.)

The second opinion, respecting the cosmogony, viz. that the subsistence of the universe is eternal, though the form be not, was generally adopted by the ancients, who inferred from the established axiom, "Ex nihilo, nihil fit," that nothing can be produced from nothing, that the creation of matter was an absolute impossibility; but, at the same time, had sufficient reason for believing that the world had not always been in its present state and order. Those who embraced this opinion may be divided into two classes: of which the first endeavored to account for the generation of the world, or its reduction to its present form, from mechanical principles only, and the activity of matter, without having recourse to the affidence of any divine power; and the others introduced an intelligent mind as the architect and disposer of all things. No principle can be more absurd than that which supposes matter to be uncreated; for, if matter was eternal and uncreated, and distinct from God, it owed its existence to its own nature only, depending on no other cause, either in respect of its essence or its properties. Moreover, it is contrary to all rules of reason, that another being should exercise so great a power over matter as entirely to change it, and form a world out of that which had been self-existent from all eternity without being a world. Besides, those who attribute the formation of the universe to mere matter and motion, suppose the eternal motion of matter; but if motion be eternal, it was either eternally caused by some eternal intelligent being, which would again introduce the deity, who, on their hypothesis, had been excluded; or it must be of itself necessary and self-existent; whence it would follow, that it must be a contradiction in terms to suppose any matter to be at rest, or to suppose that there might have been originally more or less motion in the universe than there actually was, both which consequences are too absurd to be admitted; or else, without any necessity in its own nature, and without any external necessary cause, it must have existed from eternity by an endless successive communication, which is also a plain contradiction; for an infinite succession of merely dependent beings, without any original cause, is a series of beings, which has neither necessity nor cause, nor any reason at all of its existence, neither without that, that is, it is an express impossibility. Mr. Toland, indeed, (Lett. iii.) has ventured to assert, and pretended to prove, that motion, meaning the conatus, or endeavour to move, is essential to all matter; but this is a very unphilosophical position. The conatus to motion in any one particle of matter, must be either a conatus to move some one determinate way at once, or to move every way at once; but a conatus to move some one determinate way, cannot be essential to any particle of matter, but must arise from some external cause; because there is nothing in the pretended necessary nature of any particle to determine its motion, re- ceiver and essentially, one way rather than another; and a conatus to move equally every way at once, is either an absolute contradiction, or at least can produce nothing in matter, but an eternal reft of all and every one of its parts. (Clarke's Demos. of the Being and Attr. of God, p. 96.) According to this second opinion, the state in which matter is supposed eternally to have been, is liable to several objections. The original of the earth they suppose to have been a chaos in a confined and disordered state; and to this chaos they attribute a certain motion, which they conceive to be irregular and tumultuous, but it was changed into a regular motion either by chance or divine power; but Aristotle has long ago observed, that the supposition of such an irregular motion destroys itself; as that which is infinite and eternal must necessarily have a regular and natural motion; and if the motion of the chaotic particles be natural, according to their several qualities and properties, the very possibility of matter's having continued in that state from eternity is destroyed; because, we thus introduce a principle, which will necessarily separate the several kinds of bodies one from the other, and that within a certain limited space of time. This principle also renders the affidence of a deity unnecessary; for if the chaos be acknowledged not to have in itself all the internal power that is requisite for the separation of its parts, and the placing of every element in its proper situation, there can be no occasion for the intervention of any external cause, (See CHAOS.) It is necessary, therefore, if we would reason justly concerning the production of the world, to consider God as the author of nature, and as the first and sole principle of motion. Without a deity,
deity, we shall be involved in an endless labyrinth of absurdities and contradictions. Tho' philosophers, therefore, determine reasonably, who affirm that the world had a beginning, and was once formed out of a confused chaos. And though, without a divine revelation, the era of its commencement cannot be ascertained; yet, we have strong presumptive proofs, that the present frame and constitution of the earth, at least, have been of no very ancient date. To this purpose, the following circumstances have been mentioned: The changes which must necessarily, and in the ordinary course of nature occur in the earth during a long interval of time, by putrefaction, the subidence of mountains, the daily encroachments of the land upon the sea, the consumption of water, and other innumerable accidents; the universal tradition of the most ancient nations, both learned and barbarous; the population of the earth; the late original and invention of all arts and sciences; the shortness of the history of the earth, which reaches up to a very few years; the manifold absurdities and contradictions of those few accounts which pretend to a greater antiquity; the impossibility that universal deluges, or other accidents, should at certain long periods have often times destroyed the far greater part of mankind, with the memory of all former actions and inventions, and yet never have happened to destroy them all: these circumstances, and many more considerations, deduced from nature, reason, and observation, convinced the philosophers, that the formation of the earth was novel, and of no great antiquity. And, it is not to be doubted, that the doctrine of those ancient poets and philosophers, who taught that the world had a beginning, was founded on still more ancient traditions, which were so many authorities to them, as their testimonies are at this day to us. (See Nicholl's Conf. of a Theist, vol. i. p. 1. Clarke's Dif. concerning the Evidences of Nat. and Revealed Religion, p. 272. Barnet's Theory of the Earth, b. i. c. 4.) Under this head, many different hypotheses of cosmogony have been framed; and in the recital of them, we shall begin with those which, excluding all divine interposition, accounted for the formation of the universe from the properties and action of matter only. The first is, that of the Phoenicians, transmitted to us by Sanchoniatho, and taken originally, as he assures us, from the cosmogony of Tasautus, who was the same with the Egyptian Thoth, the Hermes of the Greeks, and the Mercurius of the Romans. According to his account, the first principles of the universe were in a state of perfect form, and a third kind of matter, which, for many ages, had no bounds; and the formation of all things began by the conjunction of this spirit with its own principles, which produced "mort," derived by Bochart from the Arabic, madabb, signifying, as he says, the first matter of things. But as Sanchoniatho makes the chaos, and not mort, to be the first material principle; Cumberland deduces it from another Arabic word, madath, denoting to steep or macerate in water, whence is formed madath or mot, signifying such a solution or confusion, denominated by some mud, and, by others, a corruption of a watery mixture, which became the seed of all creatures, and hence proceeded the generation of the universe. From certain animals which had no fenes, proceeded others that were intelligent, called "Zophaim," i.e. the contemplators of heaven, being formed alike in the shape of an egg; and upon this mot, with the sun, moon, stars, and larger concretions, immediately were formed; and from this relation it hath been inferred, that Thoth con- dired the earth as a planet. The air being intensely enlightened by the violent degree of heat communicated to the sea and earth, winds were generated and clouds; and great de-
This cosmogony is charged with being a mechanical explication of the generation of the world, without any help from God; and Eusebius observes, that the same of God is not so much as mentioned in it, but a kind of fortuitous and spontaneous formation of the universe introduced. From this imputation of acknowledging no deity besides finite matter, the Egyptians have been strenuously defended by Dr. Cudworth (Intell. Syll.) and we have the authority of Plutarch (Ibs. and Ofliris) for supposing, that the Egyptians admitted an active principle, or intelligent power, eternally united with the chaotic mists, by whose whole energy, the elements were separated, and bodies were formed, and which continually predileces over the universe, and is the efficient cause of all effects. The testimony of Plutarch is corroborated by that of many other writers. (See Agathodemon and Cnoph.) Notwithstanding what has been advanced, in support of the contrary opinion, by Eusebius, Porphyry, and others, it appears highly probable that the ancient Egyptians acknowledged an active as well as a passive principle in nature, and, as Plutarch affirms, worshipped τον πρόσω ν α Kore, the supreme deity. The Egyptian priests also taught, that the earth had certain periods of revolution, being alternately destroyed by water and fire, and renewed again.

As to the Chaldeans or Babylonians, Diodorus says, they held the nature of the world to be eternal, and that it had neither any original generation, nor is subject to any future corruption; yet that the order and beautiful disposition of all things were caused by a divine providence; and that whatever are now in the heavens were not casual, or spontaneous, but perfected by the determinate and established decree of the gods. From the account given by Herodotus of the Chaldaic cosmogony, it appears that the old Babylonians expressly attributed the orderly disposition of the world, the perfecting of the heavenly bodies, and the formation of men and animals, to their supreme god, Bel; though they seem to have held the pre-existence of matter. It must, therefore, be some theology of the later Babylonians, which could with justice be charged with passing over in silence the one principle of the universe (see Cunmer. Cofni. Sancho. p. 280); in which they must have departed from the tradition of their ancestors, the ancient Chaldeans, who were celebrated for their acknowledgement of one sovereign deity, or maker of the world, as appears from that oracle of Apollo, cited by Eusebius from Porphyry, where the Chaldeans and Hebrews are alone declared to be poetized of the true wisdom, as worshipping God, the self-begotten king, in an holy manner. See Chaldean Philosophy.

The ancient pagan poets, who greatly contributed to the degradation of theology in general, have particularly censured the opinion of the world's having been produced from a chaos, without the intervention and influence of God. For an account of the cosmogony of Orpheus, see Orphus. The cosmogony of Hesiod is somewhat confused, commencing twice from the chaos, and relating things rather in a poetical than a philosophical order. The substance of what he delivers is, that in the beginning the chaos first existed, then the widely-extended earth, and next love, the fairies of the immortal gods; that the chaos produced Erebus and Night, from the conjunction of which two ensued Father and Day. After which he proceeds to give an account of the separation of the heavens and earth from the earth, the raising of mountains, and the filling of caves; and of the production of the sea, from the heavens and earth together. Aristophanes has given a much more methodical and complete description of this ancient cosmogony. His account is ludicrously introduced in a comedy; but it is conceived to have been a sketch of the old atheistic system, and may be thus explained. Chaos, or matter, confusedly moved, being the original of all things, did thence rise up gradually from leffer to greater perfection; first, inanimate things, as the elements, heaven, earth, and seas; then, brute animals; afterwards, men; and, last of all, gods; as if not only the substance of matter, and these inanimate bodies of the elements, fire, water, air, and earth, were first in order of nature before God, as being themselves also gods, but also irrational animals at last, not men too. This is the atheistic creation of the world, gods, and all, out of senseless and fluid matter, or dark chaos, as the only original deity. (Cudw. Intell. Syll.) For the opinions of several ancient philosophers concerning the origin of the world, and the manner of its formation; see Thales, Anaximander, Anaximenes, and Anaxagoras. The next atheistic system of philosophy and of cosmogony, which we shall mention, is the atomic for an account of which, see this article. The doctrine of Leucippus and Democritus, to whom this system is ascribed, is, as to the origin of the world, that the first principles were an infinite number of atoms, or indivisible particles, of different sizes and figures, which, moving fortuitously, or without design, from all eternity, in infinite space, and encountering one another, became variously implicated and entangled, and produced first a confused chaos of all kinds of particles, which afterwards, by continual agitation, linking and repelling each other, did themselves into a vortex, or vortices, where, after many convolutions and evolutions, motions and effays, in which all imaginable shapes and combinations were tried, they chance at length to settle into this present form and system of things. This hypothesis, as to the formation of the principal parts of the world, agrees with that of Epicurus, as it is represented by Lucretius, excepting that mention is not made of those vortices, which were an essential portion of the former. To the two properties, attributed to atoms by Democritus, magnitude and figure, Epicurus added a third, viz. weight; without which he did not conceive they could move at all. See Epicurean Philosophy.

Thou who, allowing the eternity of matter, introduce an intelligent mind as the diffuser of it into the form which the world now bears, may again be subdivided into two classes: one, who, allowing no substance but matter, supposed it to be endowed with understanding and life, and consequently to be God; and another, who held God and matter to be two distinct and independent beings. The first opinion, which differs but little from the Stoics, to have been that of Diogenes of Apollonia, and was certainly maintained by Hippalus of Metapontus, Heraclitus, and the Stoics. Hippalus and Heraclitus held fire to be the first principle, of which all things were made; into which, after the revolution of certain periods, they will be again resolved; and that this fire was God, whom Heraclitus described to be the most subtle and swift substance which permeates or passes through the whole universe. Heraclitus's account of the formation of the world, that the fire being extinguished, the grossest parts of it coalescing made the earth, which, being loosed by the fire, produced water, and from the exhalation of this water, the air was generated. Hippocrates had the same notion of the deity with Heraclitus, declaring his belief to be, that heat or fire was immortal and omniscient, and that it faw, heard, and knew all things, both present and future.

The Stoics held two first principles: God, and matter void of all quality; the one active, and the other passive, and that they were both corporeal; for they did not acknowledge any such thing as incorporeal substance, by which
which means they strangely confounded themselves, and reduced their two principles in effect to one and the same. See Stoics. With the notions of the Stoics concerning the constitution of the world, agrees the doctrine which is said to be almost universal among the Pundits, or learned men, in India, and secretly entertained by the Sophis and learned men of Persea. There is also a sect among the Chince, who acknowledge nature to be the sole deity, thereby understanding that natural power or operation, which, being the efficient cause of motion and rest, produces, maintains, and preserves all things. But the opinion more commonly embraced at this time by the Chince, and in which the atheism which has been so prevalent among them confounds, approaches nearer the Stoic doctrine than any other. The Siamese have also some agreement with the Stoics, in their notion of the alternate destruction and renovation of the universe. (See Confugation.) Another clafs of persons comprehends such as held two distinct and independent principles, co-existent from eternity, God and matter: and this is supposed to have been the opinion of Pythagoras and Plato; and was certainly that of Anaxagoras, Archelaus, and several others. (See Peirecydes, Plato, and Pythagoras.)

The third and last, and only true opinion concerning the origin of the universe is held by thole, who affer that the world had a beginning, being produced by God out of a fiat of non-existence; and consequently, that it is in its own nature liable to dissipation. Besides such of the nations and philosophers already mentioned, who most probably believed this creation of the world, though suspected of contrary opinions, there were several among the heathens who unquestionably belonged to this clafs. Such were the ancient Tuftians, or Etrurians; the Druids; the Magi, among the ancient Persians; the Brahmans, and Branges; which articles see respectively. Before idolatry prevailed in China, they acknowledged one God, or supreme, eternal, omnipotent Spirit, the lord of heaven and earth, the governor and director of all things, whom they worshipped under the name of Shang-ťi. They held, that a chaos was the beginning of things, from which God produced whatsoever is material in the universe. See China, and also Japan. Cudworth's Intellectual System. Brucker's Hist. of Philos. by Enfield, vol. i. Anc. Uni. Hist. vol. xviii. Appendix.

For an account of modern theories of cosmogony, see Cartesian Philosophy, Creation, and Theory of the Earth.

COSMOGRAPHY, from κόσμος, world, and γραφή, I describe, the description of the world; or the art which teaches the construction, figure, disposition, and relation of all the parts of the world, with the manner of representing them on a plane. Cosmography conficts chiefly of two parts: astronomy, which shews the structure of the heavens, and the disposition of the stars; and geography, which shews those of the earth.

COSMOLABE, from κόσμος, world, and καταλάβεω, I take, an ancient mathematical instrument, serving to measure distances, both in the heavens, and on earth.

The cosmolabe is in great measure the same with the altolabe. It is also called pantonein, or the universal instrument, by L. Morgard, in a treatise written expressly upon it, printed in 1632.

COSMOLOGY, from κόσμος, world, and γνώσις, knowledge, the science of the world in general. This Wolthus calls general or transcendental cosmology, and has written a treatise on the subject, wherein he endeavours to explain how the world arises from simple substances; and treats of the general principles of the modifications of material things, of the elements of bodies, of the laws of motion, of the perfection of the world, and of the order and course of nature. Wolf, Cosmologia Generalis, Francfort, & Leipzib, 1731.

COSMOPOLITE, or COSMOPOLITAN, a term sometimes used to signify a person who has no fixed living, or place of abode; or a man who is a stranger no-where.

One of the ancient philosophers being interrogated what countryman he was, answered he was a cosmopolite, i.e. "an inhabitant or citizen of the world." I prefer, says another philosopher, my family to myself, my country to my family, and the human kind to my country.

COSMOPOLITICAL Federation, denotes a concert between all the nations of the earth for arranging their disputes by means of umpires, instead of armies; the possibility of which is discussed by professor Kant, in a Berlin Magazine for the year 1784.

COSMOS, in Ancient Geography, a town of Palæstine, E. of Jordan. Ptolemy.

COSNAC, in Geography, a town of France, in the department of the Lower Charente, near the Gironde; 18 miles S. of Saintes.

COSNE, a town of France, in the department of Nièvre, situated on the river Loire. It is the chief place of a district, and has a sub-prefeet, and a court of justice. The number of its inhabitants amounts to 4709. The canton has 10 communes, with 14,415 inhabitants, on an extent of 165 kilometres, but the whole district counts a population of 57,938 individuals, and 66 communes, on a territorial extent of 1397 kilometres and a half. The district of Coine produces good wine, and abundance of corn. It has several iron mines and forges. Its principal trade is in hardware and cutlery.

COSPEAN, Philip, in Biography, a celebrated French preacher and prelate, who flourished in the beginning of the seventeenth century. In early life he studied under Lipsius, and in 1604 became one of the doctors of the college of the Sorbonne. As a writer he is known as a controversialist in theological subjects; but his fame as a preacher was very remarkable, especially for having introduced in his discourses illustrative citations from the sacred writings, which is perhaps one of the most useful modes of preaching. He was successively bishop of Aire, Nantes, and Liferu, and died in 1646 at the age of seventy-eight.

COSPODA, in Geography, a town of Germany, in the circle of Upper Saxony, near Neustadt.

COSPOUR, or Cospore, a town of Asia, the capital of Cañar, in the kingdom of Ava, or Birman empire; 276 miles E. of Patna. N. lat. 24° 56'. E. long. 92° 57'.

COSS, a measure of length, used in Hindoostan, the standard of which has varied at different periods, according to the caprice of the emperors. The first person who made a great innovation in this standard was Aebar, who directed it to be taken at 5000 guz, equal to 4777 yards, i.e. about two British miles and five furlongs; and Shah Jahan, about half a century afterwards, increased the standard one-twentieth part, making the cofs more than two miles and six furlongs. But since the time of Aurungzebe, the ancient, or common, cofs has returned its place, and those of Aebar and Shah Jahan are only heard of in the histories of the times when they were in use. All the cosses of the Ayn-Acbare are of the old standard, that is, the common or Hindoostan coss, such as Acbar found in use when he ascended the throne. Although the estimated length of the coss varies in different parts of the country, it does not appear that this variation through the whole of
it amounted to so much as one-fifth part; and between the northern and southern extreme of India, that is, in an extent of about 1700 miles, the difference is not more than one-sixteenth part. The miles, it is well known, vary much more in their proportions in the different parts of Europe. Taking the medium of the cofs throughout Hindoostan, and the Deccan, there will be about 30 of them to a degree of a great circle on the globe; that is, each cofs is about a geographical mile and a half. In road measure the cofs is about one statute mile and nine-tenths, or at the rate of 190 British miles to 100 cofs; one part in seven being allowed for winding, when the line of distance is extensive;—or, seven miles of road measure are allowed to produce six miles horizontally, or in a direct line. In Malwa and its neighbourhhood, the cofs are larger than any where else, and are about 1.5 geographical miles each, or 35 to a degree; and in the road from Bajlaya to Mahulpam they are so short, that 45 are required to make a degree. The proportions adopted by major R-unnell (in his "Memoir") for Hindooftan, Malwa, and the Carnatic, from a great number of examples, are respectively 1.45, 1.71, and 1.6 of geographical miles to a horizontal cofs; or 42.55, and 37.4 to a degree of a great circle. The cofs of Hindoostan Proper is therefore shorter than any other, and prevails throughout the greatest extent of country. In Nagpouir (the ancient Goodwanen) there are about 300 cofs, which is at a mean, about 2.76 geographical miles, reduced to horizontal distance; or 21.9 or 22 to a degree. This measure appears to be in use by the natives throughout Moidull and Boggicland, as well as in Nagpouir; and somtimes occasions great confusion in the reports of the "cofs," or couriers; however, they have a computation of Hindoostan cofs also, in the same country; and the proportions agree in general remarkably well with that scale, between the Bengal provinces and Aurungabad, and between Mundilla and Hydрабad.

Coss, Rule of, in Mathematics, was used for the science of algebra, when it was first introduced into Europe by means of the Italians, who named it "Regola de cofa," or the rule of the thing; the unknown quantity, or that which was required in every question, being called "cosa," the thing, whence we have cofs, and cofle numbers, &c. See ALGERB.

Cossa: in Ancient Geography, a town of Italy, in Oenotria. Steph. Byz.

Cossa. See COSA.

Cossacks, or Kozaacks, is the general name of the nations of the Ukraine, on the frontiers of Russia, Little Tartary, and northern Turkey, in the governments of Kief, Tichernigof, Novgorod Swirik, Kurfik, Orel, Tambof, &c. Their language is the Russian, their religion the Greek, and their vocation to defend the extensive frontiers of the Russian empire, against the incursions of the Tartars and other savage tribes. Unlike the rest of the Russian peasants, they cannot be given away as serfs, neither do they furnish recruits for the army; but they all serve as light horsemen, and receive pay only when they are in actual service.

The name Cossack or Kozaack is probably Tartarian. It signifies an armed warrior. So early as the ninth century the emperor Constantine Porphyrogente mentions a country of Kasachia between the Euwine and the Cufian seas, at the foot of the Caucasian mountains; and in the year 1221, prince Mililid, fon of the great Vladimir, made war upon a nation called Kofagi. Both seem to be the same people, and of Tartarian origin.

By reason of their federal constitution, military and civil, the Cossacks form a distinct part and class of the Russian nation. This constitution they obtained after the destruction of the Tartarian empire, when the Russian government appointed them the guardians of the new frontiers, and allotted certain districts of the country for their support. The Cossacks have no nobility, consequently no vassals. All are brethren, and may reciprocally command and obey. They deft their superiors from their own body, reduce them again to the common level, and choose others in their stead. The commander in chief alone is appointed by government, and in constant pay. The Cossacks are obliged to clothe themselves at their own expense, to provide themselves with horns and arms, and to be at all times completely ready to march. While in actual service each common man receives the munition and the pay of a soldier, viz. twelve roubles a year. They enter the service at the age of eighteen, and obtain their discharge at fifty. As countrymen they call their commanders in the fiefkoats, villages, Jlenitas, aldermen, and over towns and districts, attamans, corruptly he-mans. As militia they have fullbaren officers, defiatiuki and priadetiuki, over tens and fifties; captains, janiuki, over hundreds; and every regiment, which, according to the extent of the district, is from one thousand to three thousand men strong, has a general officer, vatskevooi attaman. A regiments is called a polok, and a whole division of Cossacks is under the command of a gorenii attaman. The officers have the rank of officers of the regular militia.

The weapons of the Cossacks are, a lance headed with iron, about a fapan long, with a shaft of three yards and a half in length, a fabe, a firelock or pioht, or only a bow and arrows. The lance is generally decorated with a small flayer just below the iron. The kaftoon, a plaited leather lath, an eel long, and an inch thick, fastened to a short flieck, may also be reckoned among their weapons, since besides exercising it upon their horses, they use it against an unarmed or conquered enemy. Their saddle is merely a wooden frame, under which they lay a piece of felt, to save the skin of the horse. They are all expert horsemen, and their hardy and swift, though miserably looking horses, are well taught, and perform wonders. Each polok or regiment has two or more banners of silk, with the figure of some patron saint; but they have neither drums nor martial music. Each man has two horses.

On their expeditions the Cossacks are encumbered with no tents or baggage. A piece of felt is their cloak and their bed. Provisions and forage are carried by the second horse.

The Cossacks by their origin, as well as by their present constitution, are divided into two main branches, viz. the Cossacks of Little Russia, and the Cossacks of the Don. From the former are derived the Sbode divisions of the government of Charkow, and the Zaporgians; and from the Cossacks of the Don the Polwjqshi, Grebqshi, Orenburgshi, Uralshi, Sibiriiski, &c.

During the Polish wars, numerous bodies of fugitive Cossacks fled from the western to the easterly side of the Dnteper, into the southern provinces of the Russian empire, where, preferring their military constitution, they settled in an inhabited but fertile region, partly in the government of Charkow, and partly in that of Kurfik and Vorontsch. This is the origin of what we called the Sbode Cossacks. The country in which they were established had anciently belonged to the grand duchy of Kief, and from the time of its being firll overrun by the Tartars in the year 1230, had remained a defect the whole eighty years that their dominion lasted. When the Cossacks returned to the defolated inheritance of their fathers, they were well received by the czar Alexis Michaelowitch.

The second colony of the Cossacks of Little Russia, called Zaporogian
Zaporogian Cossacks, from na, beyond, and pergi, cataracts, the ir itch, or principal settlement, being near the cataracts of the Dnieper, arose from part of the young unmarried men having been stationed on the southern borders of the Ukraine, where the Dnieper falls into the Euxine. By degrees they came to a total separation from the parental flock, and erected a military state of their own. They became so distinguished for their bravery and skill in the arts of war, that persons flocked from distant regions to this society of warriors. No women were admitted in the fetha. Those Cossacks who were disposed to marry were permitted to settle in the neighbouring districts, with the privilege of re-admission, provided they were not attended with their wives and families, whom they were allowed occasionally to visit. The Zaporogians increased their numbers by affording an asylum to defectors, and by forcing and enticing youths and children from the Ukraine and Poland into their community. They frequently performed incredible feats of valour in the campaigns of the Russians against the Turks and Tartars; nor were their services confined solely to land; by their skill in navigating the Dnieper, they occasionally defended the mouth of that river, and attacked with success the armed vessels on the contiguous coasts of the Black sea. Their boats were rowed by fifty or sixty men, had no sail, and generally carried two small cannon.

But while the Zaporogian Cossacks were thus terrible to their enemies, they were fearlessly leisurable to their allies. Though nominal subjects of the Russian empire, they pillaged the Russian merchants who passed through their country, and interrupted the navigation of the Dnieper by continual piracies. This induced the Russian government to destroy their fetha in 1775. However the Zaporogian Cossacks still subsisted, only under another name. By an ukase of the 29th of June 1792, Catherine II. gave them the illaid of Taman belonging to the province of Taurida, with the whole tract of country between the river Kuban and the sea of Azof, as far as the rivers Yeya and Laba, which Mr. Tooke computes at 10,157 English square miles in extent. Under the name of Cossacks of the Euxine, they obtained the right of electing their own attamans, but are immediately dependent on the governor of the province of Taurida.

The second main branch of Cossacks comprehends the Donjoki. They have this appellation from the region of the River Don, which they have constantly inhabited and most probably derive their descent from Novgorodian Russians. Their first settlements on the Don must have taken place after the Tartars were driven from those parts. Their first appearance as warriors among the Russian troops is in the year 1579, when 3,000 of them formed part of the army which the Czar Ivan Dalli outwitted marched against Livonia.

The Donjoki Cossacks inhabit the plains about the Don, between the governments of Saratof, Caucasus, Voroneth, and Ekaterinodaf, as far as the sea of Azof. Internal revolutions have given birth to many emigrations of the Donjoki Cossacks. The earliest happened to the Volga. In the year 1794, these Volga Cossacks were declared independent on those of the Don, but two colonists of them are only sufficiently now, the Dukofskoj and the Afrachanskoi. The former have their chief seat in the little town of Dubodka on the right bank of the Volga, and their territory lies between Dmitreffsk and Tzaritzin. The Afrachans Cossacks dwell partly in the city of Atrakhan, and partly in the villages around.

A second colony of the Donjoki Cossacks are Grebenjoi, who separated from their parent flock about the same time with the Volgaire, and settled about the River Terek, whence they are also called Terekjoki Cossacks. In a campaign of the Czar Ivan I., against the Caucasian Tartars, a body of them penetrated into a part of this great chain of mountains which from its prominent rocks was compared to a comb, Greben, and on this occasion they received the name of Grebenjoki Cossacks. Near these dwell the Semeyjoki, who are of the same origin.

The Orenburg Cossacks separated till later from their common item. They dwell along the rivers Samara, Ufi, and Urals, from Verkuralik to Ilek, and in the petty forts erected against the Kirghisians and the Bafikirs.

But one of the most numerous and most powerful branches of the Donjoki Cossacks is that of the Uraljoki, formerly called the Tailjoki Cossacks, the river Ural having anciently been known by the name of Yark. Their residence is on the right shore of the Ural, where, besides their capital Uralk, they possess the important town of Goriów on the Caspian, and defend the forts of the Ural against the Kirghisians. They chiefly live on fishing, especially the various kinds of sturgeon of which they make caviar. Besides the winter, spring, and autumn fishing, they fish particularly in the months of October and December, for the Imperial table. The fish caught at that time is sent by deputations to St. Peterburg, or Moscow. The first deputation carries from 60 to 100, the second upwards of 270 sturgeons. Besides the travelling and carriage charges, they receive fabrics mounted in silver, and 800 roubles for the first, and one thousand roubles for the last deputation.

The Siberian Cossacks form the half, and in its origin the most remarkable branch of the great Donjoki family, numbers of which abandoned their homes on the Don in the 16th century, in order to plunder the countries situated eastward. They even sailed as pirates on the Caspian sea, and spread terror on its shores. To chastise those audacious hordes, Ivan II. assembled a considerable fleet and army in the year 1577, but panic-struck at his preparations, the robbers fled into the neighbouring regions. A small body of five or seven thousand men, under the conduct of Yermak, proceeding along the rivers Kama and Tchirchulovia onwards to Permia, ascended the Ural mountains, and pressing forwards to the Tobol, the Irith and the Obi, subjugated Tartars, Vogouls and Onats. Their conquests they formally made over to the Czar in 1581. More regiments of Donjoki Cossacks were sent to Siberia. They pulled their victorious career as far as the Eastern ocean and the mountains of China, and remained in Siberia to keep the reduced nations in obedience. See Siberia and Yermak.

In 1804 there were ten regiments of regular Cossacks in constant pay in the Russian army, amounting to 94,211 men, organized as hussars or light dragoons; and 38,211 irregular Cossacks who receive no pay but when in actual service. Coxe's Travels, vol. in. Tooke's View of the Russian Empire, vol. i. Storch's Russland unter Alexander Deserteren.
**Cossart Lamb**, in *Rural Economy*, is a term applied to a lamb which is left to itself, or to be brought up by the hand, in consequence of having lost its mother or dam, before it was capable of providing for itself; or to a lamb taken from an ewe that brings two, three, or four at a growing, and consequently is incapable of bringing them all up. In all or many of these cases if there be not another ewe at liberty to fuckle and to take care of them, they must be brought up by the hand, or perish. By an ewe being at liberty is meant, one that has, by some accident, lost her lamb, and has milk enough to fuckle one yeaned by another. The term is also applied to a colt, calf, &c. which is brought up in the same manner.

**Cossato**, in *Geography*, a small town of France, in the department of Seine, which was formerly part of Piedmont in Italy. It has 2473 inhabitants, and is the chief place of a canton, which contains 15 communes, and a population of 6751 individuals.

**Cossay**, or *Cassy*, a province of Aása, in the northern part of the country of Ava. See *Mecnley*.

**Cosse de genie**, an order of knighthood instituted in 1234, by Lewis IX. at his marriage with Margaret of Provence. The motto on the collar of this order was *exaltat hominé*.

**Cosse, Charles de**, in *Biography*, marshal de Briffac, was born about the year 1506, and educated with Francis, dauphin of Viennois and duke of Brittany, of whom his father was governor. He devoted himself to arms, and was greatly distinguished in several wars, on account of which his sovereign Francis I. created him a knight of his order. After successfully serving in various parts of Italy, he returned to France, and contributed not a little to the capture of Hava de Grace from the English. He died of the gout in 1563, leaving behind him a character of great worth, for energy, integrity, and humanity. Many anecdotes are on record that do much credit to Coffe, as a man and an officer; of these we shall mention but one. Having fulfilled a commissary in Piedmont, and no farther benefits being left for his army, it was disbanded; the men, not knowing how to obtain the means of subsistence, exclaimed in an angry tone, "Where shall we get bread?" "Of me" said the general "as long as I have any." At the same time the people who had advanced goods to the soldiers on the word of Briffac entreated him to save them from ruin. He gave them all that he possessed, and then invited them to accompany him to the court of France. The Guifes refused to afford the necessary relief, upon which the marshal fled to his wife; "Here are the people who have ventured their property upon my promises; government refuses to function the agreement, and they are ruined." "Let us defer the marriage of our daughter, and give to these unfortunate people the money defined for her portion." The lady acceded to his wishes, and he was thus enabled to pay half the debts, and give security for the remainder. Moreh.

**Cosse le Vicin**, in *Geography*, a small town of France, in the department of Mayenne, with a population of 3412 individuals. Its situation is 12 miles S. of Laval, and is the chief place of a canton which has 11 communes, and 9981 inhabitants, on a territorial extent of 265 kilometres.


**Cosseir, or Cassir**, in *Geography*, a town of Upper Egypt, situated on the shore of the Red Sea, among hillocks of floating sand. The houses are built of clay, so that Bruce calls it "a small mud-walled-village." It is defended by a square fort of hewn stone, with three square towers in the angles, which are surmounted with three small cannon of iron and one of brass, in very bad condition; serving merely to terrify the Arabs, and hinder them from plundering the town when full of corn, for the use of Mecca in time of famine. The ramparts are heightened by clay, or by mud-walls, to secure the soldiors from the fire arms of the Arabs, that might otherwise command them from the sandy hills in the neighbourhood. The number of settled inhabitants is very small, though the strangers, who are continually passing and repassing, augment them prodigiously. At Coffeir they have no great supply of provisions, as there is no cultivable land near the town. The butter they use is brought from Arabia. They are supplied with good water, that of the wells near the town being brackish, by the Bedouines from Terfowey, at the distance of three hours. The drefs, and apparently the language, of the people of Coffeir approaches nearer to those of the eastern shore of the Arabian gulf than to those of the Egyptians. They are armed with the *fanbka*, a crooked knife, not less than a yard long, and commonly a lance. Upon the whole they appear, says Mr. Brown, rather settlers from the opposite shore than Egyptians. The commerce in coffee at Coffeir is small, and the whole of Upper Egypt was supplied with coffee by way of Suez and Cairo, but the Bays having imposed a very heavy duty on that commodity, the inhabitants began to import from Coffeir for themselves, whence they are now supplied with the belt coffee; and at a cheaper rate than from Suez. The town is provided with excellent baths, and pepper, and other spices, are brought hither free of duty. Some Abyssinian slaves transplanted from Jidda are landed here, and carried to Cairo; but their number is very small. The port, if it may be so called, is on the S.E. of the town; being merely a rock which runs out about 400 yards into the sea, and defends the vessels, which ride to the W. of it, from the N. and N.E. winds, as the houfies of the town cover them from the N.W. Within a large space inclosed by a high mud-wall, every merchant has a shop or magazine, for his corn and merchandise; of which last little is imported, besides coarse India goods, for the consumption of Upper Egypt itself, since the trade to Dongola and Sennar has been interrupted. Coffeir, says Mr. Bruce, has been much taken by different authors. M. Huet, bishop of Avanches, says, it is the "Myos Hormos" of antiquity; others, the "Philocrates portus" of Ptolemy. He says, that neither the one nor the other is the port, both being considerably farther to the northward. The present town of Coffeir, he says, was no ancient port at all; old Coffeir having been 5 or 6 miles to the northward. Without doubt, says Bruce, it was the "Portus albus," or white harbour. Ptolomy places here the "Accaba," denoting in Arabic a steep ascent or defile, which is found, as well as the marble mountains, towards Terfowey; and the "Aivas" mountain of the same geographer is found over Coffeir, on which and a neighbouring mountain are two chalky cliffs, which, being conspicuous at such a great distance, have given the name of white port to Coffeir, by which it was anciently distinguished. Mr. Brown informs us, that the rough and lofty rocks of porphyry and granite with which Coffeir is enrobed exhibit a magnificent and terrible appearance; and the level road between this place and Ghened, suggests the idea of immense labour in cutting it. All these circumstances, he says, concurred in testifying the importance Coffeir must once have had as a port. At certain distances in the highest rocks is observable a succession of small structures, formed with uncemented stones, which, by internal marks of fire, seem to have served as signals. Coffeir is situated, according to Bruce, in N. lat. 26° 7' 51" and E. long. 34° 4' 15". Bruce's Travels, vol. i. p. 193. Browne's Travels, p. 145, &c.
COSSETANIA, a country of Spain, according to Pliny and Ptolemy; the former of whom places it in the river Suebi and the town of Tarragona.

COSSET-LAMBE. See Cossart-Lambé.

COSSEY, or CASSIUS, in Ancient Geography, a people of Britain who are supposed to have inhabited some parts of Hertfordshire, perhaps the hundred of Calihow. See Cattivellauni.

COSSEY, or CASSIUS, in Historical Geography, an historical painter, was born at Antwerp in 1605, and was educated under Cornelius de Vos. After this he improved himself by travelling, and the reputation of his talents became known in foreign courts, and he was employed to paint several pictures for the king of Spain, the cardinal Infant, the archduke Leopold, and the princes. Cossiers composed well; his figures are correctly drawn, and his back-grounds are rich and frequently ornamented with architecture. His manner of painting is broad, and his tone of colouring generally good, though sometimes a little too yellow. In the church of Des Bourguen at Malines are five pictures of the passion of our Saviour, and over the great altar three others, representing the crucifixion, which rife to the roof of the church. Cossiers sometimes painted portrait. His own head is engraved by P. de Jode. He was director of the academy at Antwerp in 1630. Heinceken. Piklington.

COSSETBABAR, or Costinbar, in Geography, a small city of Hindoostan, in the country of Bengal, nearly adjacent to Moorshedabad, which was at all times the place of residence of the different European factors; this being the centre of their trade.

Costimabar island, a district of country so called, because it is surrounded by the Hooghly, Cossimbazar, and Ganges rivers. While the nabobs of Bengal continued to be independent princes, or nominally subjected to the court of Delhi, they resided chiefly in this island, at least during the last century. At Moorshedabad, the capital, the Durbar was held, and the English resident had a kind of fortified house assigned him; and his attendants, about four miles distant, near the populous village (called a city) which bears the same name with the island. It is surrounded by a stone wall which still remains; and the house affords elegant accommodations for the commercial resident of the company. This gentleman has the superintendence of a considerable manufacture of silk, for which Cossimbazar has long been famous. The silk is likewise noted also for its stockings, which are knitted with wires, and are esteemed the best in Bengal. The price is from 20 to 35 rupees for the "Corje," which consists of 20 pairs. This village, according to Tavernier's account, sends abroad every year 22 thousand bales of silk, weighing each \[300\] lbs.; making in all 2,200,000 lbs. of 16 oz. each. Although this statement is probably exaggerated, yet the quantity of silk consumed by the natives in carpets, fittings, and other stuffs, must have been very great. The soil of this district is not only rich, but it is the finest in the country. Crops of every sort are very luxuriant; and Cossimbazar has obtained the name of the garden of Bengal, which itself has long had the appellation of the garden of India.

COSSENCOTTA, a town of Hindoostan, in the circuit of Cicaco; 61 miles S.W. of Cicaco.

COSSEY, COQUIN, or CAQUIN, LOUIS, in Biography, an engraver, born about the year 1613, at Troyes, in Normandy. In 1609 we find him at Paris, where he billed himself engraver to the king. We have a few portraits by this artist, and amongst others a head of Louis XV. as large as life. Strutt. Heinecken. Colta.

COSTINGTOWN, in Geography, a rectorcy in Leicestershire, in the hundred of East Golecote; in this parish the junction of the Leicesters and Melton Mount navigation with the Leicestershire navigation takes place, at a spot called-Turnwater-meadow. See Canal. This village is situated upon the flatum of red-earth, and has the out-crop of the famous blue-line lime-stone about one or two miles to the north-west of it.


Gen. Ch. Cal. une-leafed, permanent, deeply divided into five segments, reflexed under the ripe fruit. Cor. Petals four or five, egg-shaped, slightly unguiculated, inserted into the receptacle, expanding, longer than the calyx. Stam. Filaments short, bristle-shaped, about the length of the petals; anthers oval-oblong. Pfl. Germ superior, roundifif, obtusifif, trigonous; style simple, short; stigma truncated. Peric. Capsule egg-shaped, inflated, trigonous, three-celled, fix-valved. Seeds two or three in each cell, globular, blackifif, affixed to a central receptacle.

Eff. Ch. Calyx inferior, five-cleft. Corolla four or five-petalled. Capsule three-celled, delicient at the apex; cells with two or three seeds.

Sp. C. trifolia. Lam. 1. Wild. 1. "Leaves ternate; leaflets oblong, obtuse." A shrub, six or eight feet high; branches cylindrical, tomentus towards the summit. Leaves alternate, on a rather long petiole; leaflets narrow-towards the base, green, and somewhat fibrous above, tomentus and brownifif-white underneat; the terminal one a fourth longer than the two lateral ones. Flowers of a moderate size, white, in lateral and terminal racemes which all together form a panicle; petals four. Calyxes, peduncles, and petioles tomentous. A native of the Ille of Bourbon, found by Commerson on the summit of mount Rempart. 2. C. pinumata. Lam. 2. Ill. Pl. 256. Wild. 2. "Leaves pinnated; leaflets five or seven, lanceolate, emarginate." A shrub, in habit resembling the preceding. Leaflets green, nearly naked, and a little scarious above, tomentus and whitifif underneat. Petioles, peduncles, and the summit of the branches clothed with a short rufus down. Flowers white, in small axillary and terminal panicles; calyx tomentous; petals five; calices long, reddish; stamens longer than the petals. Capsules tomentous. A native of the Ille of France.

COSSTINNAE, in Ancient Geography, a river of Thrace, which ran through the territory of Abdera, and discharged itself into the Bitifine lake.

COSSTIPOUR, in Geography, a town of India, in the country of Almorah; 28 miles N. of Rampour.

COSSTIUM, or Cosstio, in Ancient Geography, a town of Gallia Aquitanica, in the country and the capital of the Vautes, according to Ptolemy; now Basos.

COSSTLIN, anciantly Cosstaltiz and Cosstalain, a neig town of Prussia, in the duchy of Pomerania; situated on the river Nefbach, about a league from the Baltic. The market-place is a large well built square, in the centre of which is a statue of Frideric William I. king of Prussia, erected in the year 1724, in grateful commemoration of his having rebuilt the town, which six years before had been confounded by a dreadful conflagration. Cosstlin is the seat of a court of justice, and has some manufactories. N. lat. 54° 55'. E. long. 16° 7'.

COSSTION, called by Pliny Compoqus, in Ancient Geography, a river of India, which, according to Arrian, discharged itself into the Ganges.

COS-
It is possible that the text is a page from a book discussing the geography and history of Rome. The text contains Latin words and phrases, indicating a historical or academic context. The page seems to be discussing the city of Rome and its influence, mentioning figures such as Petronio, Strabo, and Sulpicius Severus. It also references the role of Rome in the Roman Empire, its decline, and the influence it had on later cities such as Bologna. The text appears to be quite detailed, providing insights into the political, cultural, and geographical aspects of ancient Rome.
noted for the pearl fishery, and for the shell-fish which dyes purple; while in the Atlantic is the port called that of Carthage, though at a great distance from the town.

Coste, in Anatomy. See Ribs.

Costanzi, Placido, in Biography, a painter born at Rome about the year 1658. A certain delicacy of style distinguishes the works of this master. There is a picture of his in the church of Santa Maddalena at Rome, representing St. Camillo with angels, in which the figures are so graceful, that he seems successfully to have imitated Domenichino. His paintings in fresco are much admired, of which a vault in the church of Sta. Maria in Campo Marzio is the most considerable. He died at the age of 71. Lanz.

Constanzo, Angelo de, descended from a Neapolitan family of distinguish, was born in 1507. He gave himself up to literary pursuits, and was employed more than 40 years in compiling a history of his own country, entitled Historie del Regno di Napoli, which comprehended the events of about 240 years, viz. from 1250 to 1490, and is regarded as the best history of that kingdom. It has been republished; but Conlanzo was more celebrated as a poet; he wrote the best sonnets of his time, and there have been many editions of his poetical pieces. The exact period of his death is not known; but there is a letter extant written by him in 1591. He was married and had two sons, both of whom died very young. Moreri.

Costard, George, a learned clergyman of the church of England, was born about the year 1719. He was entered at Wadham college, Oxford, where, in 1733, he took the degree of M.A. and became tutor, and afterwards fellow of his college. His first occupation in the church was derived from the curacy of Ilip in Oxfordshire. No professional duties however in the course of his life prevented him from the pursuits of literature. Before he had obtained a curacy he gave an honourable testimony to his diligence in the study of the Oriental tongues by the publication of Critical Observations on the Psalms; and in 1746 he addressed a letter to Martin Folkes, esq. president of the Royal Society, concerning the progress of Astronomy among the ancients. The object of Mr. Collard was to prove that the science of Astronomy is to be traced to the Greeks only, after they had applied geometry to the heavens. The next work published by this ingenious gentleman, was Observations tending to illustrate the Book of Job, to which as the proper date, he assigns the period of the Jewish captivity at Babylon. In 1738 he published A farther account of the rise and progress of Astronomy among the Ancients, in three letters to Mr. Folkes. We have after this, several works printed separately, or among the Transactions of the Royal Society, which exhibit the learning and critical powers of Mr. Collard. The reputation which he acquired for literature introduced him to the notice of the lord chancellor Northington, who, as a reward of real merit, presented him in 1764 with the vicarage of Twickenham in Middlesex, where he spent the remainder of his life. In the same year he published the Life of Astronomy in History and Chronology, occasionally exemplified by the Globes; this work was printed in a thin quarto, and has been regarded as of considerable use to young people who have already made some proficiency in the elements of the science. It has been since reprinted in the 2o size. Mr. Collard's next work was entitled Astronomical and Philosophical Conjectures on a Poem in Homer. He then engaged in a correspondence with the late learned Jacob Bryant on the subject of the land of Cotham, which has been printed in Mr. Bowyer's Miscellaneous Tracts. Another, and the last publication of this gentleman, was on the Antiquity of the Gentle Code, in a letter to Nathaniel Brailey Halhed, esq., a gentleman distinguished for his great learning, but who in the year 1794 was found among the adherents of Brothers, since confined in a receptacle for lunatics. Mr. Collard died in 1783, highly respected for his learning, and greatly beloved on account of the general benevolence and kindness of his private character. Bing, Brit.

Costarum Depressores Proprii, in Anatomy, a name given by Douglas, from Cowper, to what Albinus affirms to be only that part of the internal intercostal muscles which he named the ribs.

Costarum Levatores. See Levatores.

Costatum Folium, in Botany, ribbed, ought perhaps strictly to be confined to a leaf furnished with one central rib, in opposition to such as have either no longitudinal rib or nerve at all, or no principal one, the term nervosum being reserved for leaves that have more than one. Linnaeus however has incautiously applied the term in question to the leaves of Echites jehovah, which he describes in his manuscript alternation of leaflets, and in his Supplementum, p. 167, published and partly written by his son. veum fo-cofata, meaning that the lateral veins, which branch off horizontally from the midrib, are conspicuous and somewhat permanent; a fence no one could have underfoot without a reference to the original authority. It would however be a very intelligible fence of the word, such veins, (as may be seen left distinctly in Canus,) bearing a great resemblance to the ribs, coles, of an animal, ranged parallel to each other along the spine; but it would be a new meaning, hitherto, we believe, unauthorized, and differing from what is generally adopted and understood. If this last sense must, nevertheless, be admitted, the word universe will very well supply the place of cophium for a single-ribbed leaf, as nervosum at present does for one with several longitudinal ribs. S.

Costeening. See Mineralogy.

Coster, John, Laurence, in Biography, is said to have lived at Haarlem early in the 15th century, and to have been the first inventor of the art of engraving on wood, which gave rise to that of printing. The anxiety of the Dutch to know that their country gave birth to the noble art of printing may have produced many improbable stories concerning this man. It is said that, walking in a wood near Haarlem, he amused himself by cutting letters upon the bark of a tree, which he impressed upon paper. Improving this incident, he proceeded to cut single letters upon wood, and uniting them by means of thread, he printed a line or two for his children. It is added, that he afterwards printed a book, entitled, Speculum Salvationis; but baron Heinecken, who has minutely investigated the whole story, considers it as not entitled to the half credit; and pronounces the prints, attributed to Coler, to be the works of a later date. Amongst these prints are the following: A small bull of a man, with a cap, near 2 inches high, and 3 in breadth, marked Laurence Jaffo, supposed to be the portrait of Coler; a bull of an old man in profile, 2 inches high by 1 ½ wide, marked at bottom Halbert Scot de Harleken; another bull, the face turned to the left; another, a three-quarter face; and in the royal library of St. James's is a Virgin, with the instruments of Christ's sufferings, attributed to Coler. He is said to have died in 1441.

Costera, in Geography, a town of France, in the

Island
COS

island of Conifca, in the department of Golo, district of Bafla. It is the chief place of a canton, and has 1338 inhabitants.

COSTHEIM, or KOSTHEIM, a town of Germany, in the circle of the Lower Rhine, and electorate of Mentz, situated on an island in the Rhine, near the mouth of the Maine, on the side of the river opposite to Mentz, about a mile to the east.

COSTIGLIOLE, a town of France, in the department of Tarascon, which was formerly part of Piedmont in Italy. It is the chief place of a canton in the district of Xil, and has 4483 inhabitants. The canton contains 7 communes, and a population of 12,740 individuals. Also, a town of France, in the department of Stuec, which likewise formed a part of Piedmont in Italy, but this Costiglione has only 1200 inhabitants, and the canton, of which it is the chief place, counts but 4 communes, and 4923 inhabitants.

COSTIVENESS, in Medicine. See Constipation.

COSTIVENESS, in Infants. See Infant.

COSTIVENESS, in Farrowy. See also a disease to which hoffes are subject, from violent exercife, or the want of exer-
cise, and long feeding on hard meat. An opening diet, and
levente mild purges, as of Glauber's salts, with leventive elec-
tuary, four ounces of each dissolved in warm ale or water, re-
eted every other day, and, fealed bran, are recommended. But
a natural or habitual coliciveness, which is not uncommon,
is not to easily removed. In this cafe the following purge is re-
commended; 1 oz. tucourotine aloes fix drams, fpermaceti half
an ounce, fenugreek feed in powder two ounces; the whole
is to be made into two balls, with a sufficient quantity of
loopyor treacle, and given to the horse in a morning fall-
ing. Scalded barley should also be used instead of bran, and
the liquor given milk-warm for his drink. The above purge
should be repeated once in four days, till he has taken fix

COSTMARY, in Botany. See Tanacetum Balba-
mus.

COSTOBICI, in Ancient Geography, a people of Eu-
ropean Saratia; called also Costoboci by Ammianus Mar-
cellinus, and Costobici by Ptolemy.

COSTOTTL, in Ornithology, the New Spain Oriole of
Latham, and Orielus Copelatt of Gmelin, which &c.

COSTOW, or Costway, in Geography, a river of Eng-
land, which falls into the Derwent, 2 miles N. of New
Malton, in the call riding of the county of York.

COSTS, in Law, are expence, incurred in the pro-
fecution and defence of actions, and confifting of money paid
to the king and government for fines and fump duties, to the
officer of the court, to the counsel and attorneys for
their fees, &c. These costs may be confidered either as
between attorney and client, payable by the latter to the
former, whether he ultimately succeed or not; or as be-
tween party and party, being only thofe which are allowed,
in fome particular cafes, to the party fucceeding againft his
adversary. Between party and party they are either inter-
locutory or final; the former being given on various inter-
locutory motions and proceedings, in the courfe of the fut;
and the latter, to which the term costs is molt generally ap-
plicated, being fuch as are not allowed till the conclusion of
the fut.

Although it is now a maxim of ours as well as of the civil
law, that "victus victor in expenses condemnand etc." the
common law did not profecutely allow any; the increa-
ment of the vanquished party being his only punishment.
The firft statute which gave costs, under that title, to the
demandant in a real action, was the statute of Gloucester (6 Edw. i. c. 1); as did the statute of Maribridge, (52
Hen. Ill. c. 6.) to the defendant in one particular cafe, relative to wardship in chivalry — though in reality costs
were always 'confidered and included in the quantum of
damages, in fuch actions where damages are given; and, even
now, costs for the plaintiff are always entered on the roll as
increafe of damages by the court. But, because these
damages were frequently inadequate to the plaintiffs' expences,
the statute of Gloucester orders costs to be added; and
further directs, that the fame rule fhall also hold place in all
cafes where the party is to recover damages. And therefore
in fuch actions, where no damages were then recoverable,
as in quare impedit, in which damages were not given till the
statute of Welfm. 2 (13 Edw. i.) no costs are now allowed
(10 Rep. 116), unless they have been expressly given by
some fubfquent statute. The statute (3 Hen. VII. c. 10)
was the firft which allowed any costs in a writ of error. But
no costs were allowed the defendant in any fhape, till the
statutes 23 Hen. VIII. c. 15. 4 Jac. 1. c. 3. 8 & 9 W. III.
c. 11. and 4 & 5 Ann. c. 16; which very equitably gave
the defendant, if he prevailed, the fame costs as the plaintiff
would have had, in cafe he had recovered. When the
plaintiff recovers fingle damages, he is entitled only to fingle
costs; unless more be expressly given by statute. But if
double or treble damages be given by statute, in a cafe
wherein fingle damages were before recoverable, the plaintiff
is entitled to double or treble costs, although the statute be
silent respecting them (Say. Costs 228.); as in an action
upon ftat. 2 Hen. IV. c. 11, &c. In some cafes double
and treble costs are expressly given to the plaintiff; as upon
the game laws, by ftat. 2 Geo. III. c. 10. § 5. And
wherever a plaintiff is entitled to double or treble costs, the
costs given by the court of increment are to be doubled or
trbled, as well as those given by the jury. (2 Leon. 52.
Cro. Eliz. 582. 3 Lev. 551. Carth. 297. 322. 2 Str.
104. 8.; but see 1 Term. Rep. 257.) However, double or
treble costs are not understood to mean, according to their
literal import, twice or thrice the amount of fingle costs.
Where a statute gives double costs, they are calculated thus:
1. The common costs, and then half the common costs.
If treble costs: 1. The common costs; 2. Half of these;
and then half of the latter. Double or treble costs are in
some cafes expressly given to the defendant; as in actions
againft parish-officers, by ftat. 43 Eliz. c. 2. § 19: —agnit
injuries of the peace, conditio, &c. by ftat. 7 Jac. 1. c. 51:
for ditfricts for rents and services, by ftat. 11 Geo. II. c. 19.
§ 21. 2; — and againft officers of the excife or customs, by
ftats. 23 Geo. III. c. 70. § 34. 24 Geo. III. leff. 2.
c. 47. § 35.

The king, and any perfon fuing to his ufe, (ftat. 24
Hen. VIII. c. 8.) fhall neither pay nor receive costs; and
the queen-confotn participates the fame privilege. In two
other cafes also an exemption lies from paying costs. Exe-
cutors and administrators, when fuing in the right of the
deceafed, fhall pay none (Cro. Jac. 229. 1 Vent. 92.)
for the statute 23 Hen. VIII. c. 15. doth not give costs to
defendants, unless where the action fuppofeth the contract
to be made with, or the wrong to be done to, the plaintiff
himfelf. And paupers, that is, fuch as will swear them-
elves not worth five pounds, are, by ftatute 11 Hen. VII.
c. 12. to have original writs and jubelanas grants, and coun-
tl and attorney assigned them without fute; and are excepted
from paying costs, when plaintiffs, by the statute 23
Hen. VIII. c. 15: but fhall suffer other punishment at the
direction of the judges. And it was formerly ufal to give
such
such paupers, if non-fuited, their election either to be whipped or pay the costs (1 Sil. 261. 7 Mod. 114.); though that practice is now diffused (Salk. 566). It seems, however, agreed, that a pauper may recover costs, though he pays none; for the counsel and clerks are bound to give their labour to him, but not to his antagonists. (1 Equ. Cai. Abr. 125.)

To prevent trifling and malicious actions, for words, for assault and battery, and for trespas, it is enacted by statutes 43 Eliz. c. 6. 21 Jac. I. c. 16. and 22 & 23 Car. II. c. 9. § 156. that, where the jury who try any of these actions shall give lfs damages than 40s., the plaintiff shall be allowed no more costs than damages, unless the judge, before whom the cause is tried, shall certify under his hand on the back of the record, that an actual battery (and not an assault only) was proved, or that in trespas the falsehood or title of the land came chiefly in question. This statute does not extend to actions of debt, covenant, assumpsit, trover, or the like (3 Keb. 31. 1 Salk. 208.); or to actions for a mere assault (3 T. R. 301.); or for criminal conversations (3 Will. 319.); or battery of the plaintiff's servant (3 Keb. 184. 1 Salk. 208. 1 Str. 192.) In all these cases, though the damages be under 40s., the plaintiff is entitled to full costs without a certificate. Also, by statute 4 & 5 W. & M. c. 23. and 8 & 9 W. III. c. 11. if the trespas were committed in hunting or sporting by an inferior traderman, or if it appear to be wilfully and maliciously committed, the plaintiff shall have full costs, though his, as ascribed by the jury, amount to less than 40s. The legislature has also been obliged to interfere still further, to guard against trifling and vexatious actions, by means of which are commonly called the Court of Conscience Acts. 5 Jac. I. c. 15. § 4. 14 Geo. II. c. 10. which provide, that if an action be brought for lfs than 40s. against a defendant living in London, and liable to the jurisdiction of the Court of Requests there, the plaintiff shall not recover any costs, but shall pay them to the defendant. See Court of Conscience. None of the statutes, made for restraining the plaintiff's right to costs, extend to actions brought in an inferior court, and removed by the defendant into a superior court (2 Lev. 124. 4 Mod. 378. 9. 1 Ld. Raym. 395.); and it has been holden, that flat. 21 Jac. I. c. 16. and flat. 22 & 23 Car. II. c. 9. only restrain the court from awarding more costs than damages; but the jury, not being restrained thereby, may give what costs they please.

Costs are taxed, as between party and party, by the master in the King's Bench, or by one of the prothonotaries in the Common Pleas, upon a bill made out by the attorney for the party entitled; or frequently, without a bill, upon a view of the proceedings; and if there have been any extra expenses, which do not appear on the face of the proceedings, there should be an affidavit made of such expenses, to warrant the allowance of them, which is called an affidavit of increased costs. (Lip. K. B. 346.) Among fair practitioners, it is usual to give notice to the opposite attorney of the time when the costs are intended to be taxed. But for enforcing it, a rule is obtained from the clerk of the rules in the King's Bench, or one of the secretaries in the Common Pleas, which should be duly served; after which, if the costs are taxed without notice, the taxation is irregular, and the attorney liable to an attachment. The means of recovering costs, as between party and party, are by action or execution, upon a judgment obtained for them; or by attachment, upon a rule of court. There are also auxiliary means for the recovery of these costs, as by moving to stay the proceedings, until security be given for the payment of costs; or until the costs are paid of a former action for the same cause; or by deducting the costs of one action from those of another. This practice of deducting, or setting off the costs, in one action against those in another, however agreeable to natural justice, does not seem to have obtained till lately in the court of K. B. (2 Stra. 891. 1203. Bull N. P. 356. 4 Term. Rep. 124.) But in Common Pleas, it has been frequently allowed not only where the parties have been the same, but where they have been in some measure different. (Barnes 145. 2 Black. Rep. 826. Bull. N. P. 336.)

In cases between attorney and client, the former may maintain an action against the latter for the recovery of his costs. (C. Car. 159. 160.) But by flat. 3 Jac. I. c. 7. § 1. attorneys and solicitors must deliver a bill to their clients before bringing an action; and by flat. 2 Geo. II. c. 23. § 23. explained by flat. 12 Geo. II. c. 13. made perpetual by flat. 30 Geo. II. c. 19. § 75. no attorney nor solicitor shall commence any action till the expiration of one month after the delivery of his bill, subscribed with the attorney's hand. The said statute, 2 Geo. II. c. 23. also directs the mode of taxation of attorneys' bills by the officers of the several courts; and directs that if the bill taxed be lfs, by a sixth part, than the bill delivered, the attorney shall pay the costs of taxation; but if it shall not be lfs, the costs shall be in the discretion of the court. If the whole bill be for conveyancing, or for buxists done at the quarter-fees, &c. it cannot be taxed. But where an attorney had delivered two separate bills, one for disbursments and fees in causes, and the other for making conveyances, a rule was made for taxing both. And so, when it was moved, that the matter might be directed to tax those articles in an attorney's bill which related to conveyancing and parliamentary bills, the rest being for management of causes in the court of King's Bench, lord Mansfield said, there was no doubt but the matter might tax the whole. (Barnes C. B. 141. 2; 4 Term. Rep. 124. 4 Say. Rep. 253; 4 Say. Costs 350.)

By 14 Geo. I. c. 17. if the plaintiff, who intended to try a cause, changes his word, and does not countermand the notice of trial given to the defendant six days before the trial, he shall be liable to pay costs to the defendant for not proceeding to trial.

Costs are allowed in Chancery, for failing to make answer to a bill exhibited, or making an insufficient answer; and if a first answer be certified by a master to be insufficient, the defendant is to pay 40s. costs; 4l. for a second insufficient answer; 4l. for a third, &c. But if the answer be reported good, the plaintiff shall pay the defendant 40s. costs. An answer is not to be filed (until when, it is not reputed an answer) unless costs for contempt in not answering, are paid. If a plaintiff in chancery dispiffis his bill, or the defendant dismiffes the same for want of prosecution, costs are allowed, by flat. 4 and the Act of Anne, c. 15. In other cases, it seems that the matter of costs is to be given to either party is not, in equity, held to be a point of right, but merely directionly, by the statute 17 Rich. II. c. 6. according to the circumstances of the cause. Nevertheless, the statute 15 Hen. VI. c. 4. which requires forty to satisfy the party aggrieved his damages, in granting the subpoenae, seems expressly to direct that as well damages as costs shall be given to the defendant, if wrongfully vexed in this court. If in a cause of a great fraud, a person may be obliged to pay such costs as shall be ascertained by the injured party's oath. 2 Vern. 123.

COS

Rofcoe Linn. Trans. vol. 8. 349. Clas. and order, non-

Gen. Ch. Cal. Perianthus superior, tridi, shorter than the
corolla. Car. three-parted, nearly equal. Nectary petal-
shaped, longer than the corolla. Stiam. Filament petal-
shaped, linear, flat, extending beyond the anther, terminat-
ing in an ovate-lanceolate apex (upper lip of the nectary;
Swartz. Dryandra) anther oopole, adnate longitudinally
to the stam. Pyth. Style palling in a groove between the
lobes of the anther; stigma capitate. Pirite. Capsule thri-
celled, crowned with the permanent calyx, angular, opening
at the angles. Seeds numerous. Rof.

2. Rofcoe. 1. (C. arabicus; Mart. Jacq. i.c. rar. 1. 1.
Colch. 1. 145. Swartz. Prod. 11. Bankia speciosa;
Koenig. Hellenia speciosa; Retz. orb. facs. 6. 18.
Tajijn-kna; Rhed. Mal. 11. 15. tab. 8. Herba spiralis
hirtula; Rumph. Amb. 6. 143. tab. 64. fig. 1. Amon-
um hirtum; Lam. Ill. Pl. 5. Encye. 6.) "Nectary
obovately three-leaved, undulated, fringed; leaves flaky-
vilose." Root two inches thick, knotty, creeping, Stems
annual, three or four feet high, cylindrical, simple, flexible,
with a strong bark. Leaves about six inches long, and four
broad, alternate, lanceolate, acuminate, coriaceous; green
and smooth above; flaky, soft and whitish underneath.
Flowers in a terminal, nearly febrile, ereth, clofe spikc
bract two at the base of each flower; outer one egg-
shaped, acute, concave, coriaceous, broad, blood-red; the
other oblong, only one-third of the breadth of the former,
purpole at the tip, embracing the flower; calyx, in the time
of flowering, green, with a purple tip; on the fruit, blood-
red; peltal and nectary flake-coloured, sometimes almost
white; anthers white. A native of the East Indies. The
root, according to La Marce, who received specimens from
Commerson, has a flight flavour of ginger. 2. C. arabicus.
hort. mal. n. tab. 8. "Nectary egg-shaped, quite entire;
leaves smooth on both sides." Root perennial. A native of
the East Indies. 3. C. speciosus. Mart. 3. Willd. 2.
Rofe. 3. (Alpinia speciosa; Jacq. 1. tab. 1. Amonum
petalatum; Lam. En. 7.) "Nectary undulated, some-
what thind; leaves acuminate, quite entire, shining, at-
tenuated at the base." Root perennial, fleshy, irregular,
white. Stems several, nearly ereth, leafy, smooth, some-
what jointed, from one to two feet high. Leave alternatc,
oblong, smooth, on short cylindrical petioles. Flowers
yellow, or without scent, in a terminal conical spike, with
an involucre of three or four leaves at its base; bracte
imbricated, coriaceous, bright red; corolla an inch long.
A native of Martinico by the side of torrents. The inha-
bilants of Martinico make a decoction of the item and root
which they cfeem a refreshing beverage, particularly fa-
atory in annonrea and other complaints. 4. C. comobs.
Rofe. 4. (Alpinia comosa; Willd. Jacq. plant. rar. 2.
tab. 202.) "Nectary thick, oblong, channelled, ereth,
five-toothed at the tip; leaves lanceolate, undulated, some-
what villous on both sides." Root perennial. Stems four feet
high, simple, pubescent. Flavours in a terminal spike; bracts numerous, red, ovate-lanceolate, longer than the flowers; calyx red; corolla yellow; nectary
yellow. A native of Caracas in South America. 5. C.
1. tab. 1.) "Nectary concave, quite entire; leaves elon-
gate-ciliptical, coriaceous, shining."

In their natural habit, the species of this genus are dif-
ngnished from others of the same natural order, by their
inclined and spiral item, which is frequently hirtunc, and
sometimes fruticent. Rofece.

The ancient's esteemed the sconus on account of the spicy
quality of its root, but it is not easy to determine which
of the sectammus plants they called by that name. Dio-
corides mentions three sorts. 'The bolt, says he, is the
Arabian, which is white and light, and has a strong ple-
fant scent; the second is the Indian, which is thick, light,
and dark-coloured; the third is the Syrian, which is heavy,
with a box-coloured bark, and pungent smell. Piny speaks
of only two kinds, the white and the black. The Arabs,
the later Greeks and the Latinus, divide it also into two kinds,
the sweet and the bitter, a distinction not known to the earlier
Greek writers. La Marce conjectures that the scolum of
the ancients is no other than our ginger; but in this he is
wrong, for Zey.zeyzii, Zinger, is separately de-
scribed both by Dioscorides and Piny, though it does not
occur in Theophrastus.

Propagation and Culture.—Thefe plants are propagated
by parting the roots in the spring. They should be put into
pots, filled with light kitchen-garden earth, and kept con-
tantly in the tan-bed in the flower.

Costus hortifolius; Dalech. See Tanacetum 
Balantia.

Costus indicus, an American bark, called also costus 
corticus, costus corticos, or Winter's bark. The 
lands of Madagascar, in Africa, of Domingo and Guadaloupe, 
leather the most and most belt is found.

COSVICK, in Geography, a small town of Germany, in the 
principal city of Anhalt Zerbst, with an old castle plea-
santly situated on the Elbe.

COSYRI, in Ancient Geography, a people of Irind, placed 
by Pliny towards the Emses mountains.

COSTA, a town of Italy, in Umbria. Steph.

Byz.

COTABAMBA, in Geography, a province or district 
of the vice-royalty of Peru, in South America, comming 
S.E. of Cuzco, and at the distance of about 20 
leagues, and extending above 30 leagues between the rivers 
Avacay and Apurimac, within which extent are various 
temperatures of air. This jurisdiction abounds in all kinds 
of cattle, and the temperate parts produce plenty of wheat, 
maize, and fruits. Here are also mines of silver and gold; 
the richcns of which formerly rendered this province 
very flourishing; but their produce at present is greatly de-
clined.

COTACE, in Ancient Geography, an ancient town of Asia, 
in Aria. Ptolemy.

COTACENA, or COFEZENA, a country of Asia, in 
Greater Armenia, in the vicinity of the Mecelles mountains. 
Ptol.

COTIA, a province of the Lesser Armenia. Ptol.

COTENA, a town of Lesser Armenia, in the prefecture 
of Murerana. Ptol.

COTAIISIS, or COTAIASIS, a town of the Persians, in 
Asia Minor, near the Phasis.

COTAMBA, a town of Perus Propria, according to Ptolemy.

COTANA,
COTANA, an episcopal city of Afa, in Pamphilia Secunda.

COTANGENT, is the tangent of an arc, which is the complement of an arc to 90 degrees.

COTANTIN, or CONTANTIN, or Cotentin, in Geography, a country of France, before the revolution, in Lower Normandy, including the towns of Coutances, Vologne, St. Sauveur, Cherbourg, Barfleur, Carentan, Vire, Dieu, Granville, &c.

COTARI. See Coscuez and Cotereillus.

COTARTINGEN, a town of the island of Borneo, on the south coast; 100 miles W. of Banjarmasin.

COTATE, a town of India, in the province of Travancore; 14 miles S.E. of Travancore.

COTATA, a town of the island of Borneo; 30 miles N. of Banjarmasin.

COTATUA, in Ornithology. See Calangay.

COTBUS and PEITZ, the Circle of, in Geography, in Lower Lusatia, anciently belonged to the kingdom of Bohemia, of which it was received as a fief by Frederick II, Elector of Brandenburg, in 1641, and held as such till 1712, when Frederick the Great obtained its full and independent sovereignty and annexed it to the new mark of Brandenburg. But through the treaty of peace signed at Tilsit on the 7th of July, 1807, between France and Prussia, the circle of Cottbus was ceded to the new kingdom of Saxony by whose territory it had always been enclosed.

The extent of the circle of Cottbus is 171 German square miles. It is irrigated by the river Spree, which yields abundance of good fish and especially very fine carp. Its soil is generally light and sandy, but in some parts extremely fertile; it abounds in iron ore, particularly near the villages of Burg and Werben. There are 2 towns and 116 villages, containing altogether 33,250 inhabitants, most of whom are the linear descendants of the Vandalas, and have retained the Wendish language.

The town of Cottbus on the Spree, 72 miles S. of Berlin, contains 800 well-built houses and 5000 inhabitants. It has still considerable breweries, and its beer, known by the name of "cotta", or cottes, had formerly a very extensive sale all over Germany. Cottbus has also a good linen trade and excellent woollen manufactures which were brought hither by protestant French refugees at the revocation of the edict of Nantes. The cloth that was made here in 1802, whilst it was a Prussian town, amounted to 368,000 Prussian dollars, or about 62,000, florin in value.

COTE, a term used in courting, to express the advantage one greyhound has over another, when he runs by the side of it, and, putting before it, gives the hare a turn. See COURSING.

COTEGARE, a kind of refuse wool, so clung or clotted together, that it cannot be pulled afunder. By 13 Rich. II. fl. 1. c. 9. it is provided, that neither denizen nor foreigner make any other refuse of wool but cote-gare and wollen. So the printed statute has it: in the parliament-roll of that year, in coteland and wonnen. Cot, or cote, signifies as much as cottage in many places, and was so used by the Saxons, according to Verdesian.

COTE, La., in Geography, a rich, populous, and beautiful district of Switzerwand, in the Pays de Vaud; about 5 leagues in length, at a little distance from the lake of Geneva; celebrated for its wine, which bears the name of the district.—Allo, an eminence of Mont Blanc, which overhangs the upper part of the glacier of Boffon.

COTE, St. Andre, a town of France, in the department of Isere, with 3617 inhabitants. It is the chief place of a canton, which counts a population of 11,560 individuals in thirteen communes, on a territorial extent of 137 kilometres and a half. La Cote St. Andre is situated about 21 miles well of Grenoble. It was formerly famous for its excellent cordials, known by the name of Eaux de la Cote.

COTE d'Or, the Department of this, is the first department of the fourth or eastern region of France. It consists of those parts of Burgundy, which, before the French revolution of 1789, were called the Pays de la Montagne, l'Arroux, and le Djouanais. Its chief place is Dijon. It derives its name from a chain of hills extending southwards from Dijon beyond Châlons-sur-Soane as far as Macon, called the Golden Coast, because it yields that excellent wine, known by the general appellation of Burgundy, the production of which is more profitable to France than the richest wine. In 1806 the Cote d'Or produced 332,842 pipes of wine, of which the district of Beaune alone furnished almost half, viz. 143,643 pipes.

The department of the Cote d'Or is bounded to the north by the department of Aube; to the N. E. by that of the Upper Marne; to the S. E. by the departments of the Upper Saone and of the Jura; to the south by that of Saone and Loire; and to the west by the departments of the Nièvre and of the Yonne. Its principal rivers are the Saone, which has its source here; the Saone, Ouche, Tille, &c. The soil, in general, is bad and overgrown with weeds; there are however some fertile plains, especially in the district of Dijon, which yield abundant crops of corn and hay. Yet its wine and iron-mines constitute its principal riches. The climate is temperate and the air exhilarating.

The whole department is divided into four districts, 36 cantons, and 733 communes. Its principal towns are Dijon, Chatillon, Semur, Beaune, Anzoune, and Nuits. The territorial extent is 8,769 square kilometres, or 87,095 hectares, 207,600 of which are forests. It has a population of 347,642 individuals, or 751 inhabitants to the square league. Their annual contribution in taxes amount to 3,095,657 French livres, or nearly 10s. for each individual.

COTE d'Or, the Canal of the, formerly known by the name of Canal of Burgundy in France, is 250 kilometres long, and forms a communication between the rivers Saone and Yonne. It was projected by Hen. IV. of France. See CANAL.

COTE rotie is the name given to a chain of hills in France, in the department of Rhône, formerly part of the Lorraine, which produces excellent wine.

COTES du Nord, the Department of the, is the eighth department of the ninth or north-west region of France, and comprises part of the province, which, before the French revolution of 1789, was called Upper Brittany. It derives its name from the whole of its northern frontier being washed by the British channel. Its chief place is Saint Briec. It is bounded to the north by the British Channel; to the east by the department of Ille et Vilaine; to the south by that of Morbihan, and to the west by that of Finistere.

The principal rivers which irrigate this department are the Guer, Treguier, Trieux, Argueron, Rance, Lie, Oul, Blavet, &c. It has large tracts of heaths. The soil is not very fertile; yet it produces corn, especially Indian or Turkey corn, hemp, and flax. The orchards abound with apples, which are converted into cider. The pastures are very good; the cattle and the horses in particular are much esteemed for their strength. There are also some iron and lead mines.

The department of the Côtes du Nord is divided into five districts, 47 cantons, and 376 communes. Its principal towns
COT

The towns are St. Brieuc, Loudéac, Dinan, Guingamp, Lanrion, Plestin, Plouaret.

The territorial extent is 7357 kilometres or 735,720 hectares, (23,937 of which are forests,) with a population of about 1416 inhabitants for each square league, or 4591 individuals for the whole department, where an annual contribution in taxes amounts to £2,549,791 French livres, or about 52 flerling a head.

COTEA, in Ancient Geography, a country of Asia, in Greater Armenia, according to Ptolemy, who placed it to the east of the sources of the Tigris.

COTEAUX, Les, in Geography, a town on the road from Turbon to Salut, on the S. side of the S. peninsula of the island of St. Domingo; 134 leagues E. by S. of the former, and 4 N.W. of the latter. N. lat. 18° 12'.

COTECHE, a river of America, in the state of North Carolina, which runs into the Nufc; 20 miles W. of Newbern.

COTELERIUS, John Baptista, in Biography, a learned French author, born at Nimes, in Languedoc, in the year 1618. By 12 years of age he had made great progress in the learned languages, and in mathematical studies. He became a student in the college of Sorbome, where he took his degrees, and, in 1649, he was elected fellow. In this situation his application to study was most incessant: the turn of his mind was to ecclesiastical antiquities, and the works of the Greek fathers. As a writer he was first known as the editor of some of the Homilies of St. Chrysostom, and of his Commentary on Daniel. In 1667, he was associated with M. du Cange, by order of the celebrated Colbert, in the task of examining and forming a catalogue and summary of the Greek MSS. in the king's library. In 1672, he published an edition of the Fathers, with notes, in 2 vols. folio, which was reprinted, in 1685, by Le Clerc; and has since been reprinted in Holland. In 1676 he was appointed professor of the Greek language in the Royal College of France; and about the same time was published the first volume of a work, entitled "Ecclesiae Graecae Monumenta" Gr. et Lat. 4to. Two other volumes were published in 1681 and 1686. To this great labour he fell a sacrifice, and died soon after the publication of the third volume. He left behind him 9 volumes of MSS. which were deposited in the king's library. Cotelerius was highly esteemed by his contemporaries: he was a man of great learning; his integritas was as great as his learning was extensive; and his manners were faultless and unaffected. Moreri.

COTEMUL, in Geography, a town of the island of Ceylon; 20 miles S. of Candy.

COTENOPOLIS, in Ancient Geography, an episcopal town of Egypt.

COTENORUM, an episcopal see of Asia, in Pamphylia.

COTESII, a people of Dacia. Ptolemy.

CONTENTIN, Le, in Geography, was formerly a subdivision of Lower Normandy, in France, whose inhabitants were advantageously known by their ingenuity and industry. Contances was its chief place. It now forms part of the department of the Manche, has excellent pastures, and produces the belt hortiz in Normandy.

COTERILLUS, Cotarius, and Cotellus, according to Spelman and Du Fresne, are sericole tenants: but in Domnayd, and other ancient MSS., there appears a distinction, as well in their tenure and quality, as in their name. For the cotarius hath a free fowage tenure, and paid a flated firm or rent in provisions or money, with some occasional customary services: whereas the cotellus feems to have held in mere vilenage, and his parson, fite, and goods, were dispozable at the pleasure of the lord. See Cotes.

COTERIE, a term adopted from the French trading associations or partnerships, where each person advances his quota of stock, and receives his proportion of gain; and which retains its original meaning when applied to little assemblies or companies affiliated for mirth and good humour; where each one furnishes his quota of pleasantry. Here they coin new words not understood elsewhere, but which it becomes fashionable for others, to use; and they are thought ridiculous who are ignorant of them. It has been used of late to signify a club of ladies.

COTES, Roger, in Biography, the son of the reverend Mr. Robert Cotes, rector of Burtle, in Lincolnshire, was born there July 10th, 1682, and received the early parts of his education at Lincoln school, where, when he was but eleven years of age, he showed a strong inclination to the mathematics, which was encouraged by his uncle Dr. John Smith, who took him to his own house, and superintended his studies. Here he acquired the elementary part of those studies, for which he was afterwards to highly celebrated. From thence he removed to London, and was sent to St. Paul's school, where he made a very unusual progress in classical learning, though he never abandoned his favourite pursuits in mathematics. He seems also to have paid some attention to metaphysics, moral philosophy, and theology. In April 1699, when he was seventeen years of age, he was admitted pensioner of Trinity-college, Cambridge, and in 1705 was chosen fellow of that college; at this time he was private tutor to the earl of Harold and his brother, the sons of the then marquis, after duke of Kent. In the following January he was appointed professor of astronomy, and experimental philosophy upon the foundation made by Dr. Plume. For this office Mr. Cotes was not the only candidate, yet the votes were unanimously in his behalf. At the election, Mr. Whiston, who had considerable influence on the occasion, said, that he pretended himself to be not much inferior to Dr. Harris, the other candidate's matter, but he confessed that he was but a child to Mr. Cotes, who, it must be remembered, was then only in his 21st year. In 1706 he took his degree of master of arts, and in 1713 he entered into holy orders, and almost immediately, at the desire of Dr. Bentley, published a new edition of Sir Isaac Newton's Principia, to which he prefixed a preface. This added not a little to the high reputation that he had already obtained, and he was now regarded as one of the first characters of the age. In the Philosophical Transactions, he gave a description of the meteor that was seen March 6th, 1715-6. These were the only works that he published during his life, but after his death some other tracts of great merit were presented to the world by his relation, Dr. Robert Smith: these were (1.) the "Harmonia Mensurarum," five analyses et syntheseis per rationem angulorum mensurarum promotae: accedit alia epistula mathematica: per Rogerum Cotelim. Edidit et auxit Robertus Smith, &c. (2.) "Hydrostatical and Pneumatical Lectures," a work of great merit, and which was much read and highly approved. Mr. Cotes died June 5, 1716, to the great regret of his friends, and to the mathematical world in particular, in the prime of life, or indeed before he had reached that period, being only in his 33d year. He was interred in the chapel of Trinity-college, Cambridge, and to his memory Dr. Bentley wrote an excellent inscription in Latin. Mr. Whiston joined Mr. Cotes in giving a course of lectures on experimental philosophy, among
among these were 24 on hydrostatics and pneumatics, of which each took 12. Mr Whiston esteemed his own to be so far inferior to those of Mr. Cotes, that he could not be prevailed on to publish them. The early death of Mr Cotes has ever been esteemed by mathematicians a public calamity: Newton himself asserted, that he had been spared, he would have proved one of the greatest men that ever lived. Biog. Brit.

COTESIAN Theorem, in Geometry, an appellation used for an elegant property of the circle discovered by Mr. Cotes. The theorem is:

If the factors of the binomial \(a^x + x^a\) be required, the index \(a\) being any integer: let the circumference A B C D, (Plate II. 2H, 16, 3, 2 and 22.) the centre of which is O. be divided into as many equal parts as there are units in \(a^x\), and from all the dividers let there be drawn to any Point P in the radius OA, produced if necessary, the right lines AP, BP, CP, DP, EP, FP, &c. then supposing \(O \alpha = a\), \(O \beta = a\), the product of all the lines AP, BP, CP, EP, &c. taken from the alternate divisions throughout the whole circumference, will be equal to \(a^x - a\), or \(a^x - a\) according as the point P is within or without the circle; and the product of the rest of the lines BP, DP, FP, in the remaining alternate places, will be equal to \(a^x + a\).

For instance, if \(a = 5\), let the circumference be divided into ten equal parts, and the point P be within the circle, then will \(A P \times C P \times E P \times G P \times I P\) be equal to \(O \alpha \times O \beta \), and \(B P \times D P \times F P \times H P \times K P = O \alpha^2 + O \beta^2\). In like manner if \(a = 6\), having divided the circumference into twelve equal parts, \(A P \times C P \times E P \times G P \times I P \times L P\) will be equal to \(O \alpha^3 + O \beta^3\), and \(B P \times D P \times F P \times H P \times K P \times M P = O \alpha^3 + O \beta^3\).

The demonstration of this theorem may be seen in Dr. Pemberton's Epit. de Cotesii inventis.

By means of this theorem, the acute and elegant author was enabled to make a farther progress in the inverse method of fluxions than had been done before. But in the application of his discovery, there still remained a limitation, which was removed by Mr. De Moivre. See Dr. Smith's Theoremata Logometriae and Trigonometriae, added to Cotes's Harmonia Mensurarum, p. 114, 115. De Moivre, Mifel Anv. p. 17.

Coteswole, several sheep-cotes, and sheep feeding on hills. It comes from the Saxon cote, i.e. cattle, a cottage, and woold, a place where there is no wood.

Coteswold hills, in Geography, hills of England, in Gloucestershire, remarkable for the number of sheep fed there, and the good quality of the wool, a few miles S.E. of the city of Gloucester. See Sheep and Woold.

Cotthen, or Cottine, a town of Germany, in the principality of Anhalt-Cöthen, of which it is the chief place. There is an old and a new palace. The latter is the residence of the reigning Prince. The Wallstrasse is a very handsom street, planted with trees; it reaches in a straight line, from one end of the town to the other. It contains two churches, two schools, and an orphan-house for Calvinists and Lutherans. N. lat. 51° 44' E. long. 11° 52'.

Cothelstone, a village on the Quarrick-hill, in Somercetre: the lodge in this parish is a building in a very elevated situation, the place of which was determined in 1795, by a trigonometrical observation from Dumpdon flatton, distant 61,521 feet, bearing 2° 20' 45' S. W. from the parallel to the meridian of Black-Down; and from Piltfen flatton distant 104,901 feet, whence is deduced its latitude 51° 5' 23° 0' N. and its longitude 8° 5' 59" or 12° 53° 50 W. of Greenwich.

COTHIBELE, a town of Africa, in the kingdom of Morocco, and province of Tadia.

COTHON, or CETHON, in Ancient Geography, a small round island before the city of Carthage, mentioned by Strabo, who adds, that it was surrounded by the sea. Appian says that it was the name of a port, square on the one side, round on the other, and encompassed by a wall. Cthon was also the name of an artificial port, the term being of original extraction, and having this signification. Accordingly, this seems not to have been a proper and a common name amongst the Carthaginians, who pronounced it "Katham," or "Kathum." The Carthaginians were so extremely active and indefatigable, that when Scipio had blockaded up the old port, or Cethon, they, in a very short time, built a new haven, the traces of which, scarcely 100 yards square, are still to be seen. See Carthage.

COTON, an island of Greece, on the southern coast of the Peloponnesus, in the gulf of Laconia—Alto, the port of Carthage; and the port of the town of Adramyttium, in Africa.

COTHURNUS, BUSKIN, a very high floor, or pattern, raised on foals of cork; worn by the ancient actors in tragedy, to make them appear taller, and more like the heroes they represented; most of them were suppofed to be giants. See BUSKIN.

COTHEY, in Geography, a river of South Wales, in the county of Carmarthen, which runs into the Towey; three miles E.N.E. of Carmarthen.

COTIERI, a small island near the eait coast of the island of Ceylon; 20 miles E.S.E. of Trincomaly.

COTIARIS, in Ancient Geography, a river of India, in the country of the Sines. Ptolemy lays, that it joined the Senus at a great distance from their mouths. M. d'Anville supposess that this geographer refers to the different branches of the river of Cambuja, which was divided into many parts at the distance of 100 leagues from the sea.

COTICE, or COTISE, in Heraldry, is a term used to express an efculourion divided bendways into many equal parts, as in the coat of arms which they blazoned thus, "Cotice vert et or et or de six pieces," yet if the coat be divided into six equal parts only, they blazon it bendy of six, in the same manner as we do.

COTICULA, in the Natural History of the Ancients, the word by which the Romans expressed the axon of the Greeks; a flone of very great hardness, brought from Armenia, and used on many occasions; one of which was the working on fuch of the harder fones as iron instruments would not touch.

Many of the ancient Greeks, who had this flone from the island of Cyprus, called it, from its hardness, by the same name with the diamond, as they sometimes did iron allo; which manner of writing has much misled those who have copied too carelessly from them; and even Pliny, who after having in one part of his book given a right account of this flone, and called it axon, in another gives a different history of it, mistaking it for a diamond.

This cotica was long in great esteem with the ancient artificers on gems, and served not only to work upon fuch of the gems as iron could not touch, but was used to bore holes through fuch as they strung on threads, and hung in rows in their ornaments of the bracelet-kind. And Pliny's account of the other gems being bored with Cyprian diamonds, means no more, than that they were worked with this.
this cotula, which was ancienly had from the island of Cypar, and afterwards from Armenia, and was called by some, in a metaphorical sense, adamus, from its great hardness.

COTICULA is also a name given by many to the touch-tree, not from its being of the nature of the cotula of the Romans, but from its being, for the convenience of carriage and use, frequently found in the shape of a whetstone.

COTICULARIS SCHISTUS. See Hone.

COTIEL, in Geography, a town of the island of Bornéo; 140 miles N. of Banjar Maffin.

COTIERI, in Ancient Geography, a people mentioned by Pliny, as forming a part of the nation of Scythians.

COTIGNAC, in Geography, a small town of France, on the river Argence, in the department of the Var, 6 miles east of Barjols; famous for its confecionary and pears, which are reckoned a delicacy all over France, Italy, and Germany. It has 3,550 inhabitants; and is the chief place of a canton, which contains 6 communes, and 12,147 inhabitants, upon a territory of 210 kilometres.

COTIGNOLA, a town of Italy, in the Ferrarese, surrounded with walls and ditches. This town is 25 miles S.S.E. of Ferrara.

COTILLON, Fr. a well known dance for eight persons, who fettle the figure previous to starting. The word literally means a petticoat; but perhaps became a technical term in music, from the old French song:

"Mon coiition va t'i bien."

COTINGA, in Ornithology, a genus of birds in the system of Buffon, distinguished by their beautiful plumage, all the species of which belong to the new continent. As they delight in warm countries, they seldom occur south of Brazil, or even north of Mexico. Their journeys are confined within a narrow circle; they appear twice a year in the plantations, but are never observed in flocks. They generally haunt the sides of creeks in swampy ground; whence some have called them water-fowls. They live upon insects. The Creoles hunt them, partly on account of the beauty of their plumage, and partly on account of the delicacy of their flesh. Their size is from that of a small pigeon to that of a red-wing; the edges of the upper mandible, and frequently those of the lower, are scoloped near the tip; the first phalanx of the outer toe is joined to that of the middle toe; and, in most of them, the tail is a little forked or notched, and consists of twelve quills. To this genus Buffon refers the Amphil Coating of Gmelin, his own Cor- don blue or blue Kirband, or the purple-breasted Chatterer and Msmakia of Pennant, Edwards, and Latham. It is also called the "thrush of Rio Janeiro"; and by the Creoles, "h-n of the woods." Gmelin characterizes it as of a very bright blue, below purple, and wings and tail black. It is found in Brazil. Coating Caymanscbus is the Camillus Coycha of Gmelin, the gneerua of Buffon, and purple-throated chatterer of Latham. Its specific character is bright-blue, with its neck violet-blue. It is found in Cayenne. The Coating Mayancbus of Brilhon is the Amphil Mayana of Latham and Gmelin, and silky chatterer of Latham. Its fanciful character is bright blue and violet throat. The Co- tinga purpurea of Brilhon is the Amphil pompadour of Lin- neus and Gmelin, the puzotur or pompadour of Buffon. Its specific character is, that it is purple; the nearest covert of its wings is sword-shaped, elongated, boat-shaped, and stuff. Of this there are several varieties; found in Guiana. The CCotinga rubra of Brilhon is the coquette of Buffon, and Amphil Carnifex of Gmelin, the red chatterer of Latham, and red bird from Surinam of Edwards. Its specific character is, that it is red; the stripe at its eye, and the tips of the quills of the wings and tail, are black. Migrating, but common in the interior parts of Guiana.

The Coating alba of Brilhon is the Guira pango of Buffon, Amphil Carunculata of Gmelin, and carunculated chatterer of Latham. Its specific character is, that it is pellucid, expansible, and moveable caruncle at the base of the bill; found in Cayenne and Brazil. The Coating Norina of Brilhon is the Acerano of Buffon, the Guira pango of Ray and Wulphingh, and the Amphil Variegata of Gmelin. Its specific character is, that it is cinereous, and that to its throat are attached two lance-shaped caruncules; found in Brazil. The Coating Mexicana of Brilhon is the Staurus Mexicana of Gmelin, which fee. The Coating cinerea is the Lanius Nengeta of Gmelin, which fee.

COTinus, in Botany, cornua; Dod. Du Ham. See Rhus Cotinus. The xantost of the Greeks is the oleaster or wild olive.

COTLAND and Cotschland, land held by a cottage, either in fociage or villenage. Paroch. Antq. 352.

COT. See Roto.

COTOMANA, in Ancient Geography, a town of Asia, placed by Ptolemy in Greater Armenia.

COTONASTER, in Botany, Cfl. C. Banh. See Messilus.

COTONEA, and Cotonea Malus, Lob. and C. Banh. See Pyrus Cydonia.

COTONIS Inflata, in Ancient Geography, an island of the Mediterranean sea, and one of the Echahides. It was situated on the coast of Eleusis, according to Pliny.

COTOPAXI, in Geography, a mountain of S. America, in Peru, situated about 25 miles to the E. of Quito, and estimated at about 18,185 feet in height, with a volcano famous for its frequent and violent eruptions. M. Buenger observed fiones of eight or nine feet diameter ejected from this volcano to the distance of more than nine miles.

COTORSE, in Heraldry, is the French heraldic term for cotillde.

COTUTLY, in Geography, a town of Hindoostan, in the country of Meurat; eight miles S.S.W. of Delhi, and 50 N.N.W. of Agra. Lat. 27° 35'. Long. 76° 50'.

COTRODES, in Ancient Geography, an episcopal town of Asia, in Iaruria. Stephan. Byz.

COTRONA, in Geography, a town of Naples, in the province of Principato Cufa; 14 miles W. of Cangiano.

COTrone, a town of Italy, in the province of Calabria Ultra; 12 miles S. of St. Severino. This town successed to the Greek city of Croton, though it does not occupy the same extent of ground. The climate is said to be now unhealthy in summer, on account of some local causes; but the salubrity of Croton was among the ancients proverbially fabulous. The river Eulo, which flowed through the centre of the old town, now runs in a shallow rocky bed, at a considerable distance N. of the gates. A new harbour has some years ago been formed by great works for this town. But in the construction of it, due attention has not been paid to the safety of vessels trading before the town. The entrance of the town is open to the N. and I.E. winds; points of the compass, from which very boisterous blasts rush down the Adriatic, across the Tarentine gulf, though perhaps less tremendous than the Sirocco and southerly winds, whereas, if the mouth of the harbour had been more easterly, the entrance would have been more ealy, and the vessels less disturbed while in port.

This
This harbour is capable of containing a considerable number of merchant-ships, but none above the tonnage of a polacca. The mouth of the port is marked by two light-houses. Cotrone is fortified with single walls, and a castle, erected by Charles V. The private buildings are poor and sordid; the streets dismal and narrow; and ill-humour, misery, and destitution, says Swinburne, were depicted on every countenance. The town has little commerce; its chief commodities are cheese made of goat's milk, and corn; for the latter there are granaries in the suburbs, and the annual export is about 200,000 tomoli, two of which are equal to three English bushels. See Crotone.

COTRIGNANO, a town of the island of Sardinia; 10 miles E. of Saffiari.

COTSA THALIA, or Cotsetle, the little hut or mansion belonging to a small farm. Carol. Malmb. NS.

COTSA THUS, a cottage-holder, who, by his servile tenure, was bound to work for the lord. Cowel.

COTSETS, are the meanest sort of men, now denominated cottagers.

COTSOPIRI, in Botany, Rumph. See Gardenia floria.

COTT, in Sea Language, a fort of bed-frame, suspended from the beams of a ship, in which the officers sleep between the decks. It is about six feet long, one foot deep, and between two and three feet wide. See Hammock.

COTTA, John, in Biography, an elegant Italian scholar, was born near Verona about 1483, and became very celebrated for his attainments in classical and mathematical knowledge. He went through various important scenes, and travelled for some time in order that he might improve his mind; and then he kept a school at Loddi, and at length attached himself to Alvino, a Venetian commander. Under him he was taken prisoner by the French in 1580, and lost part of his writings. He died in 1582, in his 28th year, by which time he had acquired a very high reputation by his poems, which have been published at various times, particularly in the "Carmina quipque Poetarum." Morei.

COTTA, Cotes, or Cotes, in Ancient Geography, a town of Africa, placed by Piny in Mauritania Tingitana, near the columns of Hercules. He elsewhere says, that it was not far from the river Libris. Cotta was also a mountain, nor far from the Libris, in which there was a cavern consecrated to Hercules. Cotta, Cotes, or Cottes, was also a port or bay, mentioned by Scylax, which was probably in the neighbourhood of Cape Cotta; but if that be the case, it is erroneously placed between Cape Mercury and the straits of Hercules. See Cottes.

Cotta, in Geography, a town of Germany, in the circle of Upper Saxony, and Margravate of Milden; 10 miles S. of Pirna.

COTT JOBRIGA, in Geography, a town of Spain, in Lusitania; placed by Ptolemy in the country of the Victores.

COTTAGE, in Rural Economy, a name mostly applied to a small house usually erected for the use and accommodation of either the farm labourer, or those engaged in some other business or occupation; but chiefly such as are connected with that of agriculture. They were formerly in most cases constructed of rude materials of such kinds as could be the most readily procured or provided, frequently of earthy sublances, blended with others of a very perishable nature, such as straw, having the denomination of mud cottages in some districts, and cab cab in others; but which have lately given way, in some measure, to those of a more durable and lasting kind, which, in the end, are probably by much the cheapest even in this sort of buildings. The practice of connecting cottages with farm lands, was hitherto much more common than it is at present, but however greatly it may have declined within these late years, there can be no doubt, but that it was a custom which was highly advantageous to the interest and convenience of the farmer, as well as the land proprietor. It has indeed been obsverved by the author of "Practical Agriculture," with regard to the beneficial consequences attending to the former from the cottage plan, that, "though he may have a certain number of labouring people contiguous among them, they will not be able, on every occasion, and in every place, to perform all the services that are necessary on his farm." He must therefore either he under the necessity of keeping more servants than are absolutely requisite, at great expense, or he must have recourse to the aid of the cottage labourer; which, he thinks, proves the utility and importance of the cottage system, as connected with the labour of farms. But, he conceives, that this is far from being the only point of view in which it is of consequence. "It is mostly, he adds, from amongst these classes of men, that the bell and most expert labourers in the business of husbandry are procured; being, in general, injured from their infancy to such labours, and accustomed to perform the different operations of farming, they are enabled to manage the practical part of agriculture with much ease and readiness, which is far from being the case with the common labourer, who, for the most part, has been brought up to some other occupation or employment. Besides, on such farms as are at the greatest distance from towns and villages, these accommodations for labourers seem indispensably necessary, as without them much time must, of course, be lost in going backwards and forwards to their different meals, and the places in which they lodge; and from the unavoidable fatigue that attends this mode, they are little disposed to procure work at a difference, if they can possibly get it at the places where they reside, which, in many situations, often reduces the farmer to much inconvenience, if not actual loss." He consequently supposes that, where the system of cottages "can be introduced with convenience, and a mutual interest be established between the farmer and the labourer, it will be to the advantage of the former to have as many cottages on his farm as possible; and under some circumstances, as in case of a long lease, it may even be advantageous for him to build them, or, at least, affit the proprietor in doing it, by the conveyance of materials, and other such means as are in his power. And in order that an object of such importance to husbandry may be more comprehensively and generally, and with greater facility, all those legal and parochial obstructions should be removed, which have any tendency to impede the erection of such sort of buildings. There are likewise various difficulties of a local nature, which not unfrequently throw obstructions in the way of providing this kind of accommodations, whether for the farmer or the manufacturing labourer.

In the seventh volume of the "Letters and Papers of the Bath and Well of England Agricultural Society," it has been usefully remarked on this subject that, as "manual labour is and always must be necessary for the cultivation of land, it follows, of course, that houses for the habitation of those who are to perform that labour are indispensable;" and that "if the inhabitants of these houses are in health and able to work, they will be able to support themselves by the hire of their labour. If they are not, they become a burden to the parish to which they belong, and the laws will oblige the landholders to maintain them. To preserve the health and strength of these poor but necessary fellow-creatures, is therefore," he adds, "not only the duty but the interest of the landholders. Men of feeling will endeavour
to do this from principle. Men without feeling, if such men there are, will find it their interest to do it." And, "the first step towards this necessary purpose is, that of providing proper habitations for them. Humanity shoulders at the back of an industrious labourer, with a wife, and perhaps five or six children, being obliged to live, or rather to crawl, in a wretched, damp, gloomy room, of ten or twelve feet square, and that room without a floor; but common decency will revolt at considering, that over this wretched apartment there is only one chamber, to hold all the miserable beds of this miserable family. And yet infallible of this kind, to our humble it is spoken, occur in every country village. How can we expect our labourers or their families to be healthy, or that their daughters, from whom we are to take our future female domestics, should be cleanly, modishly, or even decent, in such wretched habitations? In order to remedy this serious grievance, more convenient and more numerous cottages should, he contends, be built for the habitation of the labouring poor."

And it has been justly remarked by Mr. Rudge, the intelligent author of the "General View of the Agriculture of the County of Gloucester," that "cottages are equally necessary with mansions and farm houses, though it appears by the face of the country, that this evident truth is not always recollected. In general, through the kingdom it is to be feared," he thinks, "that the popular complaint against the dilapidation of cottages is but too well founded. In the Vale, as well as other parts of this county, there are numerous instances of this mistaken policy; and under all the circumstances of the increased cost of materials, and builder's wages, it is scarcely to be supposed that the evil so far gone will find a speedy remedy. Landlords generally deem building cottages an unprofitable way of expending money; yet a land owner should recollect, that he cannot expect tenants for his lands, if proper places are not provided for the residence of the labourers. A tenant, indeed, taking a farm, either not foreseeing the speedy operation of the evil, or looking up to the landlord for redress when it shall happen, seldom if ever troubles himself about the number of cottages annexed to it. Overseers are not often aware of the power the law gives them of erecting cottages on the waste; and hence it follows that more families are crowded together than is either consistent with comfort, health, or decency; or a remedy is applied worse possibly than the disease, which it is, to build a workhouse, into which every person wanting relief is crammed without distinction of age, sex, or cause of difficulty."

"A cottage which merely protects the inhabitants from the inclemency of the weather is an incomplete provision; found policy, he thinks, requires some concomitant advantages to attach him to his dwelling." Mr. J. Loud, in his "View of the Agriculture of the County of Cheftcr," makes an observation which is confirmed by most of the other Surveys which have been drawn up for the consideration of the Board of Agriculture, that "on long experience it has been invariably found that the attachment of a small portion of land to the cottage of the labourer has been the direct medium of rendering his situation in life more comfortable and easy, and of inducing those habits of honest independence, of temperance, and of industry, which are most efficacious in promoting the happiness of individuals, and consequently the general interests of society." Mr. Rudge does not, however, think that "a cow is one of the necessary appendages to a cottage, or generally productive of good. In particular cases the experiment has succeeded well, as reported by Lord Winchelsea on his estates, and it will perhaps succeed in others, where the influence of a great land proprietor extends over the whole parish or district: but property in few instances is thus consolidated. Besides, the management of a cow is attended with considerable trouble, requires more utensils than the earnings of a day-labourer can well supply, and more conveniences of building than are usually attached to a cottage. Capital is," says he, "the isew of husbandry, and unless it be proportioned to the undertaking, the efforts will be weak, and the success uncertain." See Cottage Farm.

And he thinks there is reason to doubt whether the labourer or his wife will be able to spare the time from their respective employments, and should it be happen, the evil will overbalance the good. It is pleasing to see a good garden and a pig attached to the cottage; but neither of these interfere with the daily services of the labourer, or withdraw him from the necessary attention to the business of the farmer.

He concludes that the greatest of evils to agriculture would be to place the labourer in a state of independence, and thus destroy the indispensible gradations of society. The great body of mankind, being obliged to live with and by each other, mult necessarily confit of proprietors and workmen; and it if be allowed that the dependence of a regular supply of crops, among other things, on the regular services of the latter, it is surely an experiment not altogether without danger to place them in such a situation as will cause them to remit a portion of their labour, at a time when it is most wanted."

"Would you," says he, "then, it may be asled by the philanthropist, confine the labourer to his situation, and prevent his rise in the scale of society? No; but I would wish it to be left to his own industry and exertion: he should have more land than is usefully held with cottages. The great object is to enable him to subsist without parochial relief, and this is essentially to increase his comforts. What more is done, should be the result of a conduct peculiarly frugal and industrious. I would, "says he," always wish to infer from neatness in the cottage, the pig in the byre, and store of vegetables in the garden, that the occupier has neither been inattentive to his own, or the general interests of agriculture: and such a man will feel an attachment to his possessions, from the consciousness of having brought them to their present state of improvement by his own care. His desire to protect and improve his property will also be increased by the recollection of the labour he has bestowed upon it; and when surrounded by his family he can with truth admonish them to be attentive to their duties, in order to better their condition, not only by pointing out the evils of idleness and vice, but by showing, in his own instance, the good effects of industry and prudence, cleanliness and virtue."

"Influenced by these considerations, the writer wishes that every industrious labourer possessed a legal right, under certain restrictions, to build a cottage for himself with his own savings, and the voluntary assistance of his neighbours, and to infant a garden of a limited extent from the waste; or that in any way he might have a permanent security in the premises he occupies, till by idleness and vice lie should become unworthy of encouragement."

It is the practice with lord Rolle, on the borders of the wales of Woodbury and other commons connected with it, as related by the writer of the "Agricultural Survey of Devonshire," to encourage the peafantry to build and make small improvements. The inducing of the labourer thus to leave the village, and settle upon the borders of the common, is considered by far the most likely means of promoting the comfort, and insuring the morals of these people. The quantity of land first permitted to be enclosed
COTTAGE.

is about an acre. This improvement conducted to his lordship's satisfaction, a further inclosure is found to be made, to the extent of three, four, or five acres, and which, in some cases, have led to the cottager's obtaining a long lease of his improvements at a very moderate rent, and with the further privilege of inclosing more of the wattle, when his strength and ability will enable him to render it equal justice with that he may have already improved. In thus withdrawing the cottager from his former haunts in the village, the time that would otherwise be spent at the alehouse, or in frivolous conversation with his neighbours, is now employed to the immediate benefit of himself and family, and ultimately to the increase of the national flock.

And in the same district lord Clifford is said to attach to his cottages a small piece of garden ground, with the privilege of cultivating as many potatoes as their industry may prompt, or leisure admit of, in the young plantations; a small orchard sufficient to produce from one to two hogheads of cider, with a sufficiency of good harding or winter apples, is also granted to each peasant's family, in lieu of the grazing of a cow, which they were formerly indulged with. The cow being subject to accident, places this miniscule on a more permanent footing.

It appears at present an opinion pretty generally adopted, that, wherever it can be done, some limited portion of ground should confantly be attached to a cottage; but the mode of attaching it, and the quantity which is requisite in different cases, are matters of considerable difficulty, and which must, probably, depend on various local circumstances, such as the abundance or scarcity of land, the manner in which it is cultivated, and the dispositions of the occupiers. In every situation, perhaps, a sufficient quantity for the growing of proper vegetables for the cottager and his family may be spared, as for this purpose not more than twenty or thirty perches of ground will be required.

Mr. Rudge contends that it ought not to be extended so far as to occupy too great a portion of the labourer's time; nor, however, beautiful it may be in theory to raise the lower orders to a situation of comparative independence, ought the line to be faintly marked between the proprietor and labourer, as without this distinction neither agriculture nor commerce can flourish.

This has been observed to be a system which tends not only to benefit the cottagers, but which, at the same time, must greatly contribute to the interest of the owners of land, and the community in general. Such a plan cannot, indeed, from various local causes, be generally introduced; but it may be rendered much more common and extensive than it is at present, since the narrow, confined, and illiberal notions which have so long retarded its execution have now been fully shewn to be erroneous and ill-founded. The advantages of gardens are great, in respect to the labourers themselves, as the attention they require prevents them from visiting the ale-houses; and it has been well remarked, that there is a striking difference between the cottagers who have a garden adjoining their habitation, and those who have no garden; the former being generally sober, industrious, and healthy, while the latter are too often drunken, lazy, vicious, and frequently diseased. See Cottage Farm, and Cottage Garden.

Mr. London, in his valuable "Treatise on farming, improving, and managing Country Residences," after noticing the great advantages of improving the comforts of the labourer, by rendering his dwelling more commodious, and suggesting that from the simplicity of his establishment, but few and small apartments are required, the whole being contrived with the greatest attention to use and economy, remarks, that though from the great diversity of materials supplied for this purpose in different countries, as well as the difference of climate, there may be much variety in the buildings of this nature in them, the cottages of Great Britain may be considered under two distinct classes, namely, the English and the Scotch; from which he conceives all the other varieties have proceeded.

COTTAGE, English. It is supposed from the mild state of the climate, the evenness, and freedom from rocky inequalities in this part of the kingdom, that "the walls of the more ancient erections of this sort were constituted of clay, turf, and other similar materials," strengthened and supported by poles and cros pieces of wood, which was so predominant at the time in the country. The roof was considerably elevated, as the higher it was, the pressure upon the sides was more perpendicular, and consequently less liable to derange the materials than if it had been more lateral, which is the necessary consequence of a flatter roof. This roof was also made to project considerably over the wall, that the rain might be entirely thrown off; for it is evident that it would have otherwise soon destroyed the adhesive qualities of such crude materials. This projection was likewise useful in keeping off the rain from the windows and doors; so that in general it served a double purpose. Often, however, windows were made in the lower part of the gable; and though the projection extended over that part also, yet from the height of the eaves of the roof, the rain in falling, particularly in times of wind, might be thrown inwards upon the window. To prevent this, a projection was made over it for the express purpose of keeping off the same; and as it was known to be also advantageous in preserving the wall, it was sometimes carried across the whole end or gable, as we see still practised in several places." And he adds, "that the chimneys in this style of cottages were generally carried up singly at one or both ends of the building, commonly in the outside of the wall, and generally of a roundish shape, and terminated with a projecting coping to keep off the rain. The materials of the roof were principally wood, covered with straw, reeds, or slate tiles. Sometimes garrets were formed under it, and consequently windows were placed either in the end, in the flank, or slope of the roof, or both. The form of the windows was everywhere much broader than high, both from the lowness of the side wall, and more suitable for giving light. This required a long cover at top; but these were frequently supported in the middle by upright pieces, which served to divide them into compartments." It is further stated, that "to this general form, which includes everything relating to the personal accommodation of the cottager, he frequently, when in possession of a cow or a horse, added a small shed and other hovels to one end, or to the side; the methods of doing which are too obvious and simple to require explanation."

"From circumstances which it is unnecessary to recount, this kind of cottage would," he thinks, "in time be made two storeys in height. In this case, if the walls were built made of clay, the projections would be continued, and also placed over the lower windows; but as brick or stone would be often used, when this form was adopted, there would then be less reason for a projecting roof. But, from the thinness of the walls, the windows would necessarily be placed nearly even with their surface, and consequently much exposed to the weather; till," he says, "projections over them became necessary, as well as over the doors. These projections, as in other cases, would sometimes be made of
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wool, and sometimes of slate or grey felitis; sometimes carried across the whole length of the side walls, and sometimes no farther than over the windows."

The able writer observes further, that "cottages of both these kinds, formed of clay and wood, may be seen in many parts of Worcestershire, Gloucestershire, and Herefordshire. In other counties the same form exists, but the materials are either entirely bricks, or bricks with the wood in place of clay, turf, or even stone above, as at Ambleside in Westmorland, and several parts of Lancashire."

COTTAGE Scotch. It is suggested by the same author, that "the peculiar forms of these originated from the abundance of stones, the comparative scarcity of wood, and the severity of the climate. In them the walls were built thick, in order that they might contribute to warmth, and bear the weight of a flatter roof. The flat roof was preferred, both because it of that scarce article wood was requisite, and also because this form was less liable to be injured by the winds, which always prevail in naked, mountainous countries. The walls in this style not being so liable to decay as in the other, the projection of the roof was comparatively small. This did not give occasion, however, to projections over the windows, because the walls being thick, the glass frame was least exposed to the weather by reeding from the outer surface of the wall. The form of these windows was narrow, in order that a stone of uncommon length might easily cover them at top; and this shape likewise better secured them from the weather; thil, however, as these cottages required as much light as the others, the windows were made proportionally deep; and this gave rise to a mode of framing and glazing different from the English; and hence also another mode of opening the glass frames for admitting air. These long narrow windows it is done by having the glass frames divided horizontally. In the broad low English windows, it is done by dividing them perpendicularly. In the former case, the sashes are placed in grooves, the upper one fixed, and the lower one loose; in the latter case, one or both of the frames have hinges, and open either outwards or inwards." It is added, "that in the Scots cottage windows the glass is always in large square pieces, fixed in wood; in the English, always in small square or rhomboidal lozenges, glazed in lead, and fixed in an iron frame."

It is stated, that "the chimneys in this cottage were sometimes, and most generally, carried up in the two end walls or gables; but frequently in the central wall which separated the two apartments. But "there is a sort of cottage common in several parts of the north, in which the chimney is a hollow cone, or pyramid, formed of wood and clay, and suspended from the gable; the fire is made in an iron grate with open ribs on all sides, and, placed under the middle of this projection, diffuses its heat on every side, while the smoke ascends the wide cone or chimney. This plan has the advantage of allowing a numerous family to sit around it, and originated from the practice of small farmers who formerly used to live in their kitchen with their servants and the whole family." It is a practice still in use in several parts of England: but it is chiefly given up in Scotland. "In this case the roof was flopped on all sides in the pavilion manner. The roof here, as in the other kind, was covered with the most ready materials generally thatch and turf; in some places heath was used; as in many parts of the Highlands; in others blue slate, as in Peebleshire; grey stone slate, as in Kirkcudbright; or red flag-stones, as in most parts of Dumfriesshire. In every case, the roof being flatter, light garrets were inadmissible; and, of course, windows were made in the gable ends, or in the sides of the roof."

It is suggested that from this sort of cottage being peculiar to poor countries where rocks and stones most generally abound, "the cottagers were seldom blessed with a cow, or even pigs, and hence had no occasion to add appendages as in the other case. Fuel and most other things were lodged under the principal roof. Happily in all the improving counties of the north, the practice of giving cows to all the farm servants is becoming general; and the pleasing appendage which they occasion, begins to appear in many of the counties south of Edinburgh. In most of the northern and western counties, however, there still exists a peculiar formality, or sense of imagined dignity which manifests itself upon every occasion, both in the physical and moral actions of the inhabitants. They are strict and formal in their religion; and rigid in regard to symmetry, which, in a country so very irregular, it is natural to imagine will be the most striking and generally perceived beauty, that rather than make a cottage irregular by an exterior appendage (necessiary for a cow) they extend it in length, adding a gable and chimney top; thus making the external appearance of the cow-house and the lodging apartments exactly alike. Hence a house of this kind presents a chimney at each end, and two doors placed together in the middle. One of these doors is the entrance of the cottage; the other that of his cow." The author "would not have thought this circumstance worthy of notice were it not that some respectable improvers in Edinburgh, are building a number of flint unconnected cottages of this kind for their labourers, under the name of ornamental cottages. It must be evident to every one that whatever their form may be, they can never be clear, fresh, and wholesome, as if the cow-house was made an appendage, with its door either in the end or at some distance from the door to the living apartments of the peasants. The Scots cottage, when increased in height, so as to contain two stories, has still more formality than the low kind from being of greater magnitude."

It is remarked, that "these two styles are in general formed pretty distinct; but that, as in the borders of Wales, and the north of England, or where the people from one country have migrated to another, they are found mixed or blended in various degrees, as in the cafe in Northumberland, Lancashire, and some parts of Sterlingshire, as at Carron."

From the description of these simple and useful forms of cottages, the same author proceeds to the addition of ornaments. It is rightly conceived, he says, that utility constitutes the chief beauty of the cottage, and that it is frequently from simply attending to this, that the manner and drest of the humblest class of society become so agreeable and pleasing. But that, in regard to drest, we, in general, find that "no sooner has the pretty milk maid been enabled to cover her bosom with ashawl, or her hair with a straw bonnet, than she wishes to adorn her neck with beads. So it is with the labourer and his cottage; it is no sooner erected, and he comfortably lodged, than he thinks of something farther, and begins to add ornaments. Thee, it is true, are more generally confined to the internal parts of it; but are often applied also to the external; and especially when cottages are near the highway, or when they are collected together in villages, through an ambition to excel in neatness and decorum."

"It is conceived, that in the English cottage of the original kind, with the projecting roof, the first external orna-
mest would be to take chalk, and whitewash the clay walls, which would have a wonderful effect in giving them a gay appearance. The next thing in this style would be the decorations of their little garden, and the planting of roses, or some of the smaller fruits against the pales, which enliven it. And now, proud of this little plot, he would erect a flat close under the roof, and at the side of the door, on which he may fit with his children after the close of his labour, and enjoy the general effect of the whole."  

When this fort of "cottage made was two stories high, the chief difference in the style of ornament would be, that in place of whitewashing the walls, he would plant fruit-trees or ornamental creepers of some fort again thence, which could not do in the case where projecting roofs were adopted."

But "the inhabitant of the other cottage, the Scotch, naturally of a less gay disposition, is not profuse in whitewashing the external part of his house; he beholds a little of it however upon the edges of his windows, to indicate that all is comfortable within. He frequently places a fen near the door as in the other style; though the difference of the climate is adverse to this luxury, and indeed the nature of the foreground, which would come immediately under his eye, is not of an inviting kind to any of the fenest. Scotch cottages in a few situations, however, either from their vicinity to another style, or from accidental circumstances in the employment of the inhabitant, are decorated with excellent effect; by training honeyfucks or ivy upon the walls, and also by adding another ornament not very general in the other style. This is a row of house-leek placed along the ridge of the roof. In a few years it becomes highly ornamental, and the items of its flowers probably, he thinks, gave rise to a mode of decorating the same part in professed ornamental cottages."

It is slated, that "cottages decorated in this way may be seen in several villages near Edinburgh; but in their style there remains ample room for the interference of gentlemen, who, with little or no trouble or expense, might oblige their cottagers to plant trees in their gardens, and train creeping plants upon their walls; which, with the removal of an appendage in front, peculiar to that country, and which shall be left unnamed, would contribute much to the beauty of villages, and ultimately tend to increase the health and comforts of the peasantry."

It is conceived, that these are the ornaments which "would naturally be added by the inhabitant himself, and what would long constitute the fine decorations of cottages."

But that "there is another class which, in a certain flame of the progress of society, the builder would introduce: thus, as the houses of rich individuals, or the churches and cathedrals of rich bodies of men, became common, artists to construct them would become more numerous, and as they could not always be employed in these great buildings, they would frequently affix those whole occupation was chiefly that of erecting buildings for the lower classes of mankind. This, from a principle of vanity inherent in man, would lead them, even in these low buildings to imitate, in some degree, what they had been accustomed to in their greater works. And as the vulgar, in imitating the manners or dress of the rich, always attached themselves to the ornamental parts; so these artists, disregarding the proportions of rooms, or the principles of strength in walls or roof, would copy such mouldings and cornices as could be applied over their doors and windows. Hence, in place of mere projections of wood or slates placed over these parts to keep off the rain, Gothic labels of hewn stones would be substituted. Instead of plain round or square chimney tops, they would erect those clustered angular flasks which have to this day such an excellent effect in many places."

It is added, that "these imitations were carried so far, that in many places the wood, which supported the roof, was carved in all the parts excused to view; an excess of decoration that would please all, in the taste's age in which it was executed, which is now pleasing from its age, but which we need not fear being soon renewed, as men of abilities equal to such work cannot be employed by the inhabitants of these buildings. It is thus, that even in matters of taste every evil works its own remedy. In Scotland the imitation feldens went such a length, except in the towns or villages adjoining cathedrals or monasteries, and even in those places it seems, by the fatal influence of general poverty, soon to have given way to the common mode. Occasionally, however, after the introduction of ornament, the gables were finished with hewn stone like turrets. A border or frame of stone became frequent round the windows, and slates were more generally introduced on the roofs."

Further, "when Grecian architecture became fashionable, a few of its ornaments were introduced into cottages, particularly in towns and cities where stone was not freed, as in the suburbs of Edinburgh, Glasgow, &c. But ere this time the great passion for fine buildings, that gave rise to our Gothic cathedrals, was allowed; artists expert in carving on wood or stone became comparatively rare; and the fashionable style of decorating cottages seems, the writer thinks, to have been finally settled at nearly the same as that of the present day."

It has been remarked by Mr. Beaton, in a paper in the first volume of Communications to the Board of Agriculture, that there are different forts of cottages, which require different constructions: cottages of one, two, and three rooms; some add, cottages of four rooms: but these, he thinks, are seldom built, and are more in the style of houses of a superior kind. There are also cottages for the labourer, and for the mechanic of different trades, as carpenters, smiths, weavers, &c; each of whom would require a dwelling of a different construction. These different kinds of cottages may, he says, be divided into two classes: the plain and the ornamental: but it is the former only which he means to treat of in this place; the latter being built chiefly as pleasing objects, in different points of view, from the parks or pleasure-grounds of noblemen and gentlemen of fortune. On these a considerable expense is sometimes bestowed; and when executed and disposed with taste and judgment, they afford the most pleasing variety. Of this kind, the completest he has seen are at lord Penrhy's, in Cheffhire, whose cottages are disposed with great taste, and adorned with surrounding clumps of planting; each having a pretty little plot of garden ground and shrubbery in front, and some with honeyfuckle and jasmine beautifully entwined round the porches and windows. The indies of these are equally delightful with the outsiders, being kept so excessively neat and clean, that it is a pleasure to view them. Different plans of this sort may be seen in the Plate of cottages of the ornamental kind."

At the earl of Winchelsea's, in Rutlandshire, are also, he says, some very neat cottages, kept in excellent order; but his lordship has been at a considerable expense in erecting them. 

But as the plain and simple cottage for the labourer is the chief object at present under consideration, he endeavours to point out the most convenient, commodious, and best construction for that sort of cottage, and the cheapest manner of executing it. It is found, he affirms, that an apartment
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A cottage, 12 feet square is sufficiently large for a labourer and his family to eat in, and to hold, besides, all the furniture and utensils necessary therein. One sleeping apartment over that, partitioned in such a manner as to be most convenient to the family, and least offensive to decency, at particular times, will constitute, he thinks, all the lodging required in a simple cottage. Square single cottages of this sort may be easily conceived, without having recourse to any representation or plan; but when they are formed so as to have about four feet more in length than they have breadth, they may be divided to greater advantage in respect to convenience, and be rendered more comfortable, while the additional expense is only trifling.

The Rev. Mr. Luxmore of Bridgwater, in Devonshire, in building cottages in rows, found the following plan perfectly convenient, and at the same time economical: the room below 16 feet square, with one door and window in the front; the fire-place, with an oven opening into it by means of a flue; a door opening back into a shed or lean-to, for covering fuel, the tools of the labourer, and sheltering a pig, &c.; and another door from the shed opens into a small back yard, fenced off from the small garden attached to the cottage. A pantry fitted up with shelves is made under the stairs in the front room, which lead up to the bed-room; and opposite to the fire-place, over which there is a mantle-piece, a kind of dresser is fastened to the wall, with shelves, which constitute the fixture of the room below. The sleeping-room above is the same size. The walls of the first eight feet of these cottages are constructed with stone, the parts above with cob, being covered with a slate roof, and cost from 38£ to 45£, when finished.

There ought, Mr. Beaufort says, always to be at least two cottages built together. From there being, besides other advantages, considerably less expense in this way in proportion, than building them singly. In this case he thinks the space of four feet, noticed above, ought to be taken from the extreme ends, by which the vents would be got in the middle wall, which separates the two cottages. In most of the modern cottages he has visited, (although many of them are perfect in every other respect,) the general complaint seemed to be, he says, that the upper chambers were too excellently hot in summer, and too cold in winter. As these were scarcely habitable. This is owing, he conceives, to the thinness of a slate or tile roof, and to those chambers being so far within the roof. A proper thatched roof is therefore, he thinks, the best preventative of this evil, where there are upper chambers. If the roof be of tile or flate, which is by far the neatest and most durable, the ceiling should be lathed and plastered, and air-holes with shutters so contrived, that they may easily be opened or that at pleasure, to give air to the whole roof in hot weather, which will tend greatly to keep the upper chambers cool in summer. Even a white sheet thrown over that side of the roof most exposed to the sun, or the roof itself whitened, will also have the same effect. It is suggested that, in winter, if the angle in the roof be filled with straw, it will probably prevent the cold from penetrating so easily as would otherwise be the case.

The same writer further states, that the saving of fuel is certainly a material object to a cottager; and as it would be attended with a considerable additional expense to him to keep a fire in the sleeping-apartment above, as well as below, if a method can be devised to give the upper apartment some benefit from the fire below, it would surely, he supposes, be of great advantage in cold weather. This might, no doubt, he thinks, be done by a flue; but some benefit may be derived from the vent being in the middle of the building, particularly if this vent be made as thin as possible where it passes through the upper chamber. If that part of it were made of plate iron, or such as is used in towers on board of ships, it would add, he supposes, considerably to the warmth of the room. There is still another way that occurs to him, that would have a good effect. In all apartments kept warm by a fire, it will be found that the air at the ceiling is considerably warmer than the air below. If, therefore, in a cottage, that warm air is permitted to ascend to the apartment above, it is natural to suppose it will render this apartment considerably warmer. This may be accomplished, either by means of flaring hatches, or by grating, in the least frequent part of the floor, made so as to open or shut easily when required. These methods of warming and cooling the upper chambers in cottages have probably, he says, never been tried, and are perhaps new; they may therefore be improved upon. At all events, they are at least worthy of being mentioned, if they can in any degree contribute to the comfort of the cottager.

With respect to the economy of fuel, in so far as the construction of the fire-place is concerned, much perhaps still remains to be effected, notwithstanding what has been long since done by Franklin, and lately by Count Rumford. From numerous experiments, and much attention to the subject, Mr. London, in his "Treatise on Country Residences," has suggested a plan for this purpose, by which he conceives much more heat will be thrown out from a given quantity of fuel, than by any other which has been hitherto proposed; and which has the additional advantage of great simplicity. It is represented in Plate IX. fig. 1, in which a denotes the ground plan of the gable, or end-wall, in which the fire-place is to be formed; b is the fire-place, or chamber for the fuel, which is constructed of stone or brick on three sides, but open in the front part; c is the ash-pit, and d the floor of the cottage. Fig. 2, is a section of the gable and chimney; e, the grate which contains the fuel, being placed on a level with the surface of the floor, which is shown at f, g is the solid wall or gable, projecting wholly over the fire; h, the vent or chimney, by which the smoke passes away.

The object of this contrivance is accomplished "first, by the lowness of the fire-place; secondly, by the projection over it, which makes the flames ascend very slowly, and thus gives it time to cool, or give out its heat into the room; thirdly, by having the vent at h of proper dimensions; that is, such as will neither permit more nor less than the requisite quantity of smoke and air to escape." The ingenious writer has in general found that in similar cases, its superficial contents should be equal to that of the upper surface of the fuel chamber.

There is likewise another circumstance, especially in small cottages, where every little space is of much importance, which is that of constructing the stair-case in such a manner, as that it may take up the least possible room within the building. Mr. Beaufort has suggested the following contrivance as practised in Cheshire, with this intention; by which the stair only takes up half the space, in ascending, that is required in the common way. But it will be better understood by the representation as seen at fig. 3, in Plate IX., which is a front view of the flaps; the chain from a to d is two feet five inches; a is the first step, seven and a half inches high, upon which the left foot is put; b is the flap for the right foot, seven and an half inches higher, but in the same line with a; the left foot being set on a and the right on b alternately to the top of the flap. It is of course evident that, as the flaps for the right and the left foot are in the same line, though neither of them rises more each time than seven and an half inches, every time one of the other foot...
foot is moved, it must rise 15 inches higher than it was before, as is shown at fig. 4, in which the dotted lines represent the left foot steps, and the whole lines the steps for the right foot. In a stair of this sort suppose that each head or breadth for the foot is nine inches, and that each rife of one foot above the other is seven and an half inches, as shewn in the figures, it will follow, that, as each rife rifies the height of two steps or 1 1/2 inches every time it is moved, it must be obvious that six steps in this way will rife as high as twelve in the common method, and will stand in need of only one half the size of a hatchway or opening in the upper floor, which would be necessary for the same number of steps in the usual mode; a circumstance of much conveience where there is little room, and which has the advantage of affording more space for the chambers above.

It is further remarkecd in the same valuable paper, in order to avoid the inconvenience experienced in small cottages in accommodating a large family of children of different fizes with decency, that much in this view may be effected by a different mode of elfoping the beds from that fually adoptcd; namely that of having one bed placed over the other; and where it is thought proper to keep the boys and girls separate, it may be completely accomplished by having the entrance to the beds of the former on one fide and that of the latter on the other fide, by which the advantage of separate apartments will be nearly obtained as is shown at fig. 5 in Plate IX.

The fame writer likewise suggests that every cottage should have two apartments, an upper and lower, though this is thought unnecessary by fome, but he advises it principally on the grounds of upper apartments being more healthy for sleeping in than those on the ground, and from much of the most expensive part of fuch buildings, the roofing, being faved, as well as some of the walls.

In the building of this fort of cottages, the moft economical plan the fame writer supposes will be that of being directed by the nature of the materials on the spot; where stone in plenty is at hand, it will in general be the moft cheap and lafting. Brick is durable but moftly too expensive for this purpose. Earthy materials may be employed with advantage in this intention where it is properly prepared by the use of the rammer; a mode which has been lately practiced with much fuccefs in different inftances in this country, and which has been long employed in France. See Plate IX.

Another fort of earthy material confifted of clay, or any fort of tenacious loam, well trodden and wrought together with good wheat straw, is frequently made use of in these buildings, in different districts, espeically for the upper parts of the external walls, but it is neither a good nor durable fubfiance, where other matters can be procured.

For the purpose of roofing, the cheapest material is probably that of thatch, espeically where feed can be had recourse to; but it is far from being a durable material, though it has the advantage of preserving a more equable temperature in the internal apartments, at different feasons, than most other fubstances that are generally employed. Heath or what in the northern parts of the kingdom is denominated heather, is not unfrequently made use of in the fame way, and where it abounds may be employed as a cheap material. It is said to be rather durable in this application. The thatt and taling fort of articles for this purpose are however, thole of the flatc and tile kind, though a little more expensive at first. Strong brown paper, well pitched, has been propofed as a light, durable, and very cheap material for this use, by Mr. Bentor, who notices an infance of its being employed with success in the northern part of the fland on a building of large dimensions. Pitch is however a fubftance which is soon decompoft by the influence of the atmofphere, and of course this would seem to be a material which cannot be much depended upon for the purpose of a covering for buildings.

The flooring, in buildings of this fort, is another material article to be considered. Boards have unquestionably many advantages over most other forts of materials for this purpoele, but the expence is considerable. Where they are employed, deal is probably the belt and most reasonable, but where other forts are at hand, they may be made use of with great propriety, and at perhaps as cheap, if not cheaper rate. But it is suppofted that in many fituations a conforiable faving in the expence of floors may be made by having recourse to plaster for the purpoele. It is suppofted that this fort of flor would be particularly proper for cottages as being more retentive of heat than that formed of deal, by which means the upper chamber might be preferred in a more warm flate during the winter falon. It is however more than probable that the abforption of moisture would more than counterbalance this suppofted advantage, as there can be no doubt that fuch fubfiances have fuch tendency to draw humidity from the surrounding atmofphere. See Floor, and Roof.

The author of the "Survey of the County of Salop," is in general a friend to fingle cottages, becaufe two families under one roof may have more caufes of contention arife between them; on the other hand, in inlfets, poor persons have frequently the merit of forgetting their differences, and then the affuliance they are inclined to give each other is made more eafy by nearnefs of fitation. It is poifible, however, where two or even three houses are joined together, to contrive the gardens in fuch a manner that there shall be little interference, and sometimes three neighbouring families may do better together than two.

It is fuggcsted as a convenient plan for this fort of building to have the door to open opofite to the jamb of the chimney, fo as to fether the kitchen fire-place; with the chimney in the middle, fo as to keep the two chambers warm; neither of which would be a thoroughfare to the other, as by this means the education of the children may be more decent. The gable ends should be fo formed as each to admit a fufficient window for the purpoies of light and air, which, where the chimney is at the end, cannot be the cafe, and when not in the end a dormant becomes necceffary in the roof, or the walls must be railed unneccarily high for the purpoee of getting proper room for the window. In many cafes the room next the kitchen may be conveniently occupied as a work room, and where fire becomes neceffary for the bufines of warmth, that in the kitchen may ferve both apartment by having the contrivance of an iron door in the back of the chimney. This is fuggcsted as an idea of the late Dr. Franklin. A fire place in the larger bed chamber would be convenient in many cafes, as of ficknefs, &c. The size of the two bed rooms should not be too large, as in that cafe inconvenience may be produced from too many of the family being crowded into one of them, health and decency being forgotten, in order to preceve the other for the accommodation of a lodger, or occasional mendicant travellcr. It is added that in some cafes no upper rooms are neceffary, the ground floor being fufficient; and that where a ground floor is made perfectly dry there is a convenience in having the bed-room to open out of the kitchen, becaufe the kitchen fire will be fufficient for the purpoee of inles; and that the bed-room, if dry, will be warmer, as being left exposed to the wind, and left liable to be heated from the roof in summer or chilled from it in winter. But wherever perrons are to sleep near a roof, thatch well ceiled is the most comfortable,
as it preserves the room in an even temperature. Landlords intent on making comfortable cottages will, he thinks, often find it best to build or repair before they engage with a tenant; for men not used to improvements, cannot comprehend effects before hand, and they will apprehend want of accommodation without reason, or oftentimes if attended to lose the conveniences they would have wished; or they will not with for those, in which it is best they should be indulged. For instance, windows to open will not always be desired. He thinks it perfectly possible to improve men in their turn of mind, by giving them properties in and about their habitations which they may not have thought of or desired.

In the first volume of Communications to the Board of Agriculture it has been remarked by Mr. Holland, that "building cottages must be attended with more or less expense, according to the facility with which materials can be procured, and the price of labour; and in some measure upon the foundation that may be required, and the labour necessary to form the level on which they are to stand; but supposing no extraordinary expense, the estimate will be, thus:"

- 18 yards digging the foundation and levelling the ground, at 3d. per yard...
- 160 feet of reduced brick, rough flone, or flint in the foundation, and one foot above ground, taking an average price, brick will probably be the dearest. When flint or rough flone is to be got, the least expense is to lay it in dry, and run liquid mortar, or, as the workmen call it, "grout," to fill the interstices, and cement the work. It was thus the old hard walls, of which great remains are still to be seen, were constructed; at 6d. per foot, 22 inches thick...
- 170 feet of reduced brick work to the chimney and chimney shaft, at 6d. per foot...
- 628 feet superficial of earth or mud-walling, 20 inches thick, at 3d. per foot...
- 1 square, 66 feet superficial, of flooring to the kitchen, if of earth, at five shillings per square...
- 78 feet of flat brick paving, laid dry in the pantry, at 3d. per foot...
- 11 feet 3 inches of chammy earth, paved with brick an edge, in mortar, at 6d. per foot...
- 33 feet of brick foundation to the privy, nine inches thick, and two feet deep, open towards the dung hill, at 6d. per foot...
- 15 feet cube in a small brick sunk in the pant-y, raised two feet six inches above the floor, the run from it to the yard and privy, at 9d. per foot...
- 16 feet run of brick gutter across the yard, at 3d. per foot...
- 452 squares of the bolt reed-fraw thatching on the house, including roofing of fir-poles, or rough unfawn timber, prepared for thatching, at 40s. per square...
- 3 squares of chamber flooring, timber and boards, at 4½. per square...
- 3 squares of under-flooring, serving as a security against fire, and a ceiling below, at 20s. per square...
- Mantle, taffels, and inside burn to kitchen chimney...
- The fireplace, one flory...
- Three brick Reps, with wood nettings from the kitchen to the pantry...
- The street ledged door, lintel, lock, hinges, bolt, latch, and inside linings, from the pantry to the yard...

The inside linings to ditto...

The ledged door, door-cafe, lintel, lock, hinges, bolt, latch, and inside linings, from the pantry to the yard...

This door may perhaps be dispensed with in cottages of the smaller size.

The projection on the outside of the street door intended to shelter it from wind and rain, of boarding covered with lead...

No. 5. Inside ledged, deal doors, hinges, latch, and jams...

No. 4. Cfement windows, solid frames, lintel, lead lights, and inside window boards...

Outside fall-down shutter and hinges to one window, fastened with a pin and key...

Wood bars to secure the pantry window...

Outside painting to the window frames, doors, and shutter...

Skirting in the kitchen and two lodging rooms...

A drawer and two drawers in the kitchen, with a shelf over it...

Small drawer and shelf in the pantry...

Closet shelves, and two closet locks...

Lath and plaster to the ceilings of the lodging rooms, and partitions...

Rendering against the walls in the kitchen only...

The white-washing in the inside, the colouring on the outside, and forming the rustics...

Completing the privy above the brick foundation, and covering it with thatch...

Building the hayloft covered with thatch, inclufed three fides with flaps, leaving an opening (for pitching fuel or straw, &c.) next the street...

Fencing next the street, and small gate...

Total estimate for one cottage...

"The fencing to the garden, as well as making it, are not considered, as it may vary considerably in every situation. The supply of water is a fort of general concern, of which it is difficult to say how much will attach to a particular cottage."

"This estimate is for a cottage of the smallest size. Perhaps buildings in the country may, he says, be thus divided, increasing in size and expense according to the order in which they are named."

"Cottage, small size, for the labourer."

"Second size for the labouring man, who, by his skill and working talk-work, earns more than the common labourer."

"Cottage, third size, for the village shopkeeper, shoemaker, taylor, butcher, and baker."

"Cottage, fourth size, for the farmer, mat'ler, small farmer, alchoufe, and trades requiring room."

"Cottage, fifth size, for the large farmer, generally called a farm-house, suitable to the most improved system of farming, but nevertheless partaking of the general principles already laid down. The expense of all such buildings will depend not only on the facility of procuring labour and materials, but on the economy and management of those who direct, and those who undertake the construction of them. It is not the least merit of the proposed plan," he observes, "that the cottages of the smallest may be executed with the refuge of greater works, the 'crumbs from the rich man's table,' and that the materials are nearly all neither taxed nor taxable."
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given many useful climates concerning the building of cottages on different plans.

In a series of plans for cottages by Mr. J. Wood, much light has been thrown on the construction of habitations for labourers, and the following seven principles laid down, as the means of obviating any inconveniences to which cottages, as usually built, are liable:

"1st. The cottage, says he, should be dry and healthy; this is effected by keeping the floor 16 or 18 inches above the natural ground; by building it clear of banks, on an open spot of ground, that has a declivity or fall from the building; and by having the rooms not less than eight feet high, a height which will keep them airy and healthy.

"2dly. They should be warm, cheerful, and comfortable. In order to attain these points, the walls should be of a sufficient thickness (if of stone, not less than 16 inches; of brick, at least a brick and a half) to keep out the cold of the winter, or the excessive heat of the summer. The entrance should be screened, that the room, opening the door, may not be exposed to the open air; the rooms should receive their light from the east or the south, or from any point between the east and the south; for, if they receive their light from the north, they will be cold and cheerless; if from the west, they will be so heated by the sun's afternoons as to become uncomfortable to the poor labourer after a hard day's work; whereas, on the contrary, receiving the light from the east or the south, they will be always warm and cheerful. So like the feelings of men in a higher sphere, says the writer, are those of the poor cottager, that if his habitation be warm, cheerful, and comfortable, he will return to it with gladness, and abide in it with pleasure.

"3dly. They should be rendered convenient, by having a porch or shed, to screen the entrance, and to hold the labourer's tools; by having a shed to serve as a pantry, and a store-room for fuel; by having a privy for cleaning and decency's fake; by a proper disposition of the windows, doors, and chimneys; by having the stairs, where there is an upper floor, not less than three feet wide; the rife or height not more than eight inches, and the tread or breadth not less than nine inches; and lastly, by proportioning the size of the cottage to the family that is to inhabit it; there should be one lodging room for the parents, another for the female, and a third for the male children; it is melancholy, he says, to see a man and his wife, and sometimes half a dozen children, crowded together in the same room, nay, often; in the same bed; the horror is ill heightened, and the inconvenience increased, at the time the woman is in childbed, or in case of ill-health, or of death: indeed, whilst the children are young, under nine years of age, there is not that offence to decency, if they sleep in the same room with their parent, or if the boys and girls sleep together, but after that age they should be kept apart.

"4thly. Cottages should not be more than twelve feet wide in the clear, that being the greatest width that it would be prudent to venture the rafters of the roof with the collar pieces only, without danger of spreading the walls; and by using collar pieces, there can be 15 inches in height of the roof thrown into the upper chambers which will render dormer windows useless.

"5thly. Cottages should be always built in pairs, either at a little distance from one another, or close adjoining, so as to appear one building, that the inhabitants may be of affluence to each other, in case of sickness, or any other accident.

"6thly. As a piece of economy, cottages should be built strong, and with the best of materials, and these materials well put together; the mortar must be well tempered and mixed, and lime not spared; hollow walls bring on decay, and harbour vermin; and bad fappy timber foot reduces the cottage to a ruinous state; although he would by no means have the cottage fine, yet he recommends regularity, which is beauty; regularity will render them ornaments to the country, instead of their being, as at present, disagreeable objects.

"7thly. A piece of ground should be allotted to every cottage, proportionable to its size; the cottage should be built in the vicinity of a spring of water—a circumstance to be much attended to; and if there be no spring, let there be a well.

"On the foregoing seven principles, Mr. Wood recommends all cottages to be built. They may be divided, he thinks, into four classes or degrees; first, cottages with one room; secondly, cottages with two rooms; thirdly, cottages with three rooms; and, fourthly, cottages with four rooms." Plans of each of which, which have great merit in the form of their distribution, may be seen in his very able work; and also in the annexed plate.

It has been well observed by the author of the Shropshire Report, "that general rules are to be cautiously received, and sparingly followed; that local situation may make this or that place the best. For instance, many old houses, especially if framed together with timber, are worth repairing, though the outward appearance may bespeak a great deal of wretchedness or decay, for they can generally be made more comfortable than a new house, and at less expense. He is much more anxious that houses of this description should be kept in clean and good repair, than to prescribe any particular form. He would only suggest the impropriety of making them, or indeed any other object, have an outward appearance, intended to counterfeit their inward use. All castellated or gothicised cottages, all church-like barns, or fort-like pig-dykes, he should conceive to be objectionable. They are intended to deceive, and they tell you that they are intended to deceive. It is not pleasant to encourage any thing like deceit; but in these instances, imposition effected is rarely gained; it amounts only to imposition attempted; and could the deceit succeed, would not present a prospéct with fewer properties about it, than there really are. Almost every species of country building has a good effect if properly placed, and neatly executed; and what are the least ornamental, or indeed the most disgusting of their appendages, cease to shock when supported by the relative situation they fland in, shewing their necessity and their use. A dunghill in a farm-fold, creates no disagreeable idea; but, connected with a gothic gateway, or embattled tower, it is bad. Cattle protected by the shade of a barn, form a picturesque group; but sheltering under a circular portico, the propriety is glaring. Linen hanging to dry on the hedges of a cottage garden, may be peevish without displeasure; but the clothes of men, women, and children, surrounding the cell of an anchorite, or the oratory of a monk, have their natural unadornedness increased by the contrast. On the other hand, a fine dreeed lawn, with milder cottages on the outside, may be compared to the laced cloaths and dirty linen some foreigners were accursed of wearing. The whole of a gentleman's estate should be his pleasure ground; the village should be one object in the scene; not shunt from it. There may be a little more polish about the manion, but it should not be an unnatural contrast to the surrounding objects. The face of no country is bad, but as it is disfigured by artificial means; and the cheapest and best improvement is, merely to..."
to remove what offends, and to take care that the buildings or fences that are wanted, are neat and appropriate, exhibiting distinctly the real intention."

In the following figures are given plans and elevations of some of the most simple kinds of cottages for the laborer, contrived on the principles that have been above laid down, as well as others of the most approved nature. Their roofs are represented as of slate, and other materials; the field being, however, by far the nestest. Their external appearance may be varied in different ways, according to the taste of the builders, and the nature of the situation where they are built, which ought always to be well attended to; for what will have a good effect in one place, or point of view, may not be so striking or pleasing in another: but this will depend greatly on the care and good sense of such persons as are employed in directing the construction of such buildings.

For such small-lazed cottages as may be suitable for little estates, lying out of the alluvions of wadies, commons, or other lands of a similar kind, several ground plans and elevations of dwellings, to be built of different species of materials, have been given in the volume of Communications to the Board mentioned above, by Mr. Crocker, an intelligent land-surveyor in Herefordshire. Some of these are built with mud walls, composed of soft lime and straw, well trodden together, as noticed above, and which, by degrees, is laid on, between, &c., to the height required. This is a species of building, he says, which is not uncommon for cottages, and even for better houses, barns, &c., in the western, and some other parts of the kingdom. It is, he adds, the cheapest habitations that can be constructed, and is also very dry and comfortable. There are others which have generally a footing of stone wall, two feet high, on which is placed a strong sill of timber; to which are superadded uprights of quarterings, two feet apart, into which are inserted rounds of rough wood, somewhat like ladder-work, at six or seven inches, one above the other, to the height required. These spaces between the rounds are well filled with a mixture of the above more and dry lime, previously well trodden together, called cab-daib; the whole being then plastered with good mortar, and rough-canted. These kinds of buildings are used where stones are scarce, or where cheapness is the leading object. There are others built with a sort of rough lime masonry, and sometimes flucoedover; and although they are more expensive than the others, yet they are the strongest and most durable of any, where such materials are to be had without great expense of carriage.

Circular cottages, upon very simple, cheap, and economical plans, have likewise been lately proposed by Sir John Sinclair, for the purpose of containing farming and manufacturing labourers. These are constructed wholly of brick, the walls and roof together. Where this sort of material can be readily provided, this mode may probably be had recourse to with advantage, as being convenient and durable, and requiring little repairs.

Elevations of the larger sorts of cottages on this plan, are given at figs. 3 & 6, in Plate VIII. of Agriculture. These are of different dimensions, as shown in the plate. At figs. 4 & 5 are given plans of the internal parts of the smaller, the former representing that of the room above, and the latter the ground plan. And, at figs. 7 & 8 are shown the plans of the upper and lower floors of the larger.

Several other plans of large and small cottages, both of the common and ornamental kind, are contained in the same plate. At fig. 1 is given the elevation of a double cottage, or small farm house, which is adapted to numerous cafes, and which is capable of being built of rough masonry, at the expense of about 90l. or 100l.

And, at fig. 2, is a representation of the ground plan of the same. At fig. 9 is shown the elevation of a small neat cottage of the common kind, calculated for the ordinary farm labourer. And, at fig. 10 is given the elevation of another small cottage, with two rooms, on a more enlarged and ornamental plan, but suited to a variety of cafes.

At fig. 11 is the elevation of a cottage, recommended by Mr. Crotchley, with three rooms and a cellar, and which, from the number of its conveniences, is considered by cottagers in general, as well adapted to their purposes; but even when built with mud walls, with its various comforts, it cannot be erected for less than about forty pounds.

The ground plans of these three last cottages have not been given, as the internal divisions may be so contrived as to suit the particular purposes of the builder.

Fig. 12 exhibits the elevation of two cottages built together, the vents being made in the partition wall between them.

And, at fig. 13, is seen the ground-plan of them; A A, flairs to upper-chamber; B B, pantries or milk-houses; C C, ovens.

This is probably the cheapest plan on which small cottages for labourers can be built.

Fig. 14 is the elevation of two cottages built together, on a small somewhat ornamental plan, designed by Mr. Wyatt for lord Penrhyn, at Wingham in Chefiire. Cottages erected on this plan have much effect in many situations, and are capable of being raised at no very great expense.

Cottage Farm, in Rural Economy, a name which has lately been given to the small allotments of land which are frequently attached to the cottages of the better kind. This is a practice which prevails in some districts, it is said, with considerable advantage to the labourer, in rendering him more comfortable and industrious, as well as in facilitating his means of supporting his family. It is a system of cottage management which the earl of Winchelsea has introduced pretty extensively in the county of Rutland, and it is remarked on the authority of Mr. Barker of Lyndon, in the same district, in support of the utility of the plan, that "most of the poor people of that parish keep cows; one or two, or three to a family, which is a great advantage to them; so that it can hardly be said there are any industrious persons there who are really poor, as they are in some places where they have not that advantage. It has been the practice in that place time out of mind. They have a ground called the Cottagers' Close, wherein the poor, for an easy rent, keep 16 cows, and Mr. Barker supposes it was laid out for them at the inchofuure of the Irdhiiup in 1624. On that close, he says, the cows go from May-day till St. Andrew's; and in winter, they take them into their home fields; and while several neighbouriing lordsips were opened-field, they could buy hay reasonably cheap to feed them with that at teaon; and we have several little takes, of a few pounds a year, rented by the cottagers; and he has made some new ones; for, since the inchofur of those parishes, hay is grown very dear, and is scarcely to be had at all. He conceives it always was the custom for every one to keep a milk-cow, who could raise money enough to buy one, and could get keeping for it. He supposes it was so in this parish.
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parish long before it was inclosed. He thinks there are cottagers who have a right of common in Hambledon cow-patridge; but supposes his lordship must know that matter better than he does. There are little ellates, and cottagers who have a right of common in North Luffenham cow-patridge. There were performances at Edith, Welton, who had much before the inclosure, and he believes it was the same in other towns also; but he is sorry to say, that he is afraid most of those cottagers were taken away at the time of the several inclosures, and the land thrown to the farms; where-in he conceives they did very wrong; but they have, say, an instance of a new inclosure where that good old custom is still retained, as Sir John Rutland has made a considerable number at Ketton; he believes the cow-patridge, and ploughing-land to each cottage, are four acres. He wishes that parliament would make it a rule never to grant an inclosure, without a close laid out for the benefit of the poor.

And his lordship states, that upon his own estimate, the custom is, he believes, of the greatest antiquity; he has labourers, tenants, in whose families the lands they now occupy, have been for near two hundred years; and they have, as far as he can learn, been generally good labourers, and received no relief from the parish. He has made several new takes of that fort, and he has always found them to answer. And that, with regard to manuring their meadow-ground, by keeping their cows in hovels during winter, and by keeping a pig or two, which they generally do, they contrive to make manure; their employer generally tells them, or gives them, a small quantity of straw, and sometimes they procure fern, or collect weeds.

In fact, it is conceived that the situation of labourers may be claffen in this way:

1stly, Those who have a sufficient quantity of grazes inclosed land, to enable them to keep one or more cows winter and summer, and a garden near their house.

This, in his opinion, the best situation for a labourer, as consisting the hay-making, the rest of the business is done by himself and his labour is not interrupted. Where a grazes field is allotted to a certain number, and each have a field for mowing near their house; or where there are two fields, one grazed, and one mown at the time of the proper time, it will be as advantageous, or nearly so, as having small inclosures to themselves. But he supposes it can only take place in countries where there is abundance of grazes land.

2dly, Those who have a summer pasture for their cow, and some arable land upon which they grow the winter provisions.

He thinks, that this is not so advantageous as No. 1, because more of their time is taken up by the arable land; however as they mull, in order to make any hay, have part of the land fown with grazes, the labour is not so much as to be hurtful to them. He has several fuchs upon his estate, which answer very well. This is adapted to countries where there is a mixture of pasture and arable. He supposes.

3dly, Those who have a right of common for the summer keep of the cow, and a meadow, or arable ground, or a meadow in common, for the winter provisions. And, this would, he thinks, like the two former, were it not that nine commons out of ten are so much overstocked, that the summer keep is very bad. This is a very great loss; and if the meadow is in common, it is another disadvantage. It is certain, that upon an inclosure, if the owners choose it, the labourers who keep cows may be placed in a much better situation than they were in, as much as inclosed land is more valuable to occupiers of every description, than commons and open fields. Garden ground may also be allotted to them, and others, which cannot be done while the land remains uninclosed. He is persuaded, that where these things are attended to, very few objections to an inclosure will arise on the part of the labourers, and that the land owners will have the satisfaction of benefiting the poor, and at the same time of making their own property more valuable, by adopting what in all probability will be the means of keeping down the poor's rate. He supposes that gardens near the houses to all these should not be the cafe, as they have land, they may have garden stuff; but if their land is at a distance from their houses, it is not so advantageous; and if their take is all grazes, they can find no ground to dig, except, perhaps, where a haylock has been placed the preceding year.

4thly, Those who have a right of common, and a garden. This is certainly very beneficial to them; geese and pigs may be kept upon the common, and the latter fed with the produce of the garden, and a small quantity of purchased food.

5thly, Those who have a right of common, and no garden. He imagines, that this, unless fuel is obtained, is of no great value to them; it fuel is obtained, it is of great value, and the loss of it difficult to be made up to them.

6thly, Those who have several acres of arable land, and no summer pasture for a cow. This is, he believes, of no sort of use to the labourer; for though he may cultivate part of it as a garden, the continued labour it would require to stall-feed a cow, winter and summer, and the quantity of land he must till, would occupy so much of his time, that the take would, upon the whole, be injurious to him, even supposing the land inclosed, and continuous to his house; if at a distance, or not inclosed, the disadvantage would be still greater. He is sorry to differ in opinion upon this subject from Mr. Barclay, but perhaps, in other parts of the island, his plan of a take entirely arable, might answer. He is persuaded it would not, in the parts he is acquainted with, and that the farmers would not sell them hay, which is a part of his plan. He believes, that a summer pasture for the cows is absolutely necessary to make it of advantage to the labourers who keep them.

"7thly, Those who have a garden near their house." He adds, that this is the best thing that can be done for labourers in arable countries, and where there are no other reasons which prevent them from keeping cows.

It is here remarked, that as the land cultivated as a garden, will produce a greater quantity of food for man, than in any other way, and as four-fifths of the labour bestowed upon their gardens, will be done by the labourers at extra hours, and when they and their children would otherwise be employed, it may not be too much to say, that 100,000 acres allotted to cottages as garden-ground, will give a produce equal to what 150,000 acres cultivated in the ordinary way would give; and that without occupying more of the time they would otherwise give the farmers who employ them, than the cultivation of 20,000 acres would require.

8thly, Those who have no land whatever. This, it is observed, is a very bad situation for a labourer to be placed in, both for his comfort and for the education of his children. When a labourer is possessed of cattle, his children are taught early in life the necessity of taking care of them, and acquire some knowledge of their treatment; and
and if he has a garden, they learn to dig and weed, and their time is employed in useful industry; by which means, they are more likely to acquire honest and industrious habits, than those who are bred up in poverty and laziness we too often see; for he believes it is a certain fact, that extreme poverty begets laziness.\(^1\)

On these grounds he is "clearly of opinion, that the letting land to labourers is of great utility both to them, to the land-owners, and to the community; for through in every village some idle people will be found, who are not fit to be entreated with, or capable of receiving benefit from land, till the greater number will; and it may have the effect of making those indolent who would not otherwise have been so. When circumstances will admit of it, their having land enough to enable them to keep a cow is the most desirable thing for them; but a very great part of the island will not, in his opinion, allow of that system being pursued, where there is hardly any thing but arable land; and also in the neighbourhood of large towns, the value of grazeland is too great, he supposes, to allow of labourers renting it with advantage. A garden may, however, be allotted them in almost every situation, and will be found of infinite use to them. In countries where it has never been the custom for labourers to keep cows, it would, he believes, be very difficult to introduce it; but where no gardens have been annexed to the cottages, it is sufficient to give the ground; and the labourer is free to know what to do with it, and will reap an immediate benefit from it. Of this he has had experience in several places, particularly in two parishes near Newport Pagweli, Bucks, where there never had been any gardens annexed to the labourers' cottages, and where upon land being allotted to them, they all, without a single exception, cultivated their gardens extremely well, and profited receiving the greatest benefit from them. He begs to observe, that when he mentions cow-pastures he always supposes there to be a sufficiency of land to enable the cow to be kept tolerably well, both in summer and winter. If this is not the case, he believes that the cow is but of little benefit to the owner; and when he mentions gardens, he always means large gardens, from half a rood to a rood, or more, if the land is poor. Tho' very small plots of a few yards square, which are sometimes seen near cottages, he can hardly call gardens. He thinks there should be as much as will produce: all the garden stuff the family consumes, and enough for a pig, with the addition of a little meal. He also thinks they ought to pay the same rent that a farmer would pay for the land, and no more. He is persuaded, that if it frequently happens, that a labourer lives in a house at twenty or thirty shillings a year rent, which he is unable to pay; to which if a garden of a rood was added, for which he would have to pay five or ten shillings a year more, that he would be enabled, from the profit he would derive from the garden, to pay the rent of the house, &c. with great advantage to himself.

"It is supposed that not a little difficulty is thrown in the way of the introduction and establishment of the cottage-farm plan by the attention or diabolical of farmers to countenance such a practice. Under the present circumstances of the increasing wages and expenses of farm labour, it is, however, obviously their advantage to encourage them as much as possible;" as is shown in speaking of cottage and cottager. See Cottage and Cotter.

It has likewise been stated by the writer of the "General View of the Agriculture of the County of Salop" in respect to this practice, that "a labourer's fields should be chiefly confined to pasture, that the care of them may not interfere with his work for hire. The number of acres necessary will depend upon the nature of the land. He has not found fix acres to interfere at all materially with a labourer's work; and if he is fit to be trusted with land at all, he should have at least three acres, where the situation of his house will admit of so much; for unless the ground joins the house it cannot be looked after without loss of time; and it will generally prove a nuisance to the neighbours, or the public. In addition to the situation of a cottage, the tenant's character and circumstances must be well considered. Where it is convenient or advisable to let him have land enough for a cow, he may have a larger garden, and the necessary pig-plot should be so placed, that the soil from them may be directed to manure the field. The pig-plot should have a small court, to open into the garden only. When a pig is bought it is small, and may be carried to the sty, where it may remain. He has found this the only way of preventing the pigs from wandering over the village. If the sty opens to a road it will never be so well guarded as when the first act of trespass must be on the owner's garden." It is however added by the intelligent author that "he is truly anxious, under all proper restrictions and limitations, of advancing and recommending the practice of letting some land to labourers and country mechanics. It appears to him to be the only just, both in a moral and political point of view. Let us consider," says he, "in the first place, the probable effects of such situations being more easily attained. Would not farming servants, both men and women, have an additional motive to be careful, and seek after matrimonial, instead of illegal, engagements, if they knew that, when they could save money enough to buy a bed, a pig, and a cow, they might settle and have a house and land for which they could afford to pay rent, and from which they could hope to maintain themselves and rear a family? Or, if they have not money enough to buy all their flock at first they may raise potatoes in one year, sufficient to increase their capital. Let us now consider them placed in their cottage. The care of the land is not sufficient to take the labourer off from a single day's work; but when it is fix o'clock in the evening, he has an interest in going directly home, to see that his fences are in repair, or to dig a part of his garden. So he knows too that when a garden, the land and this (or if the weather is too bad for him to remain out of doors, still he knows,) that his house is warm, and that his supper is preparing; for his wife has been at home the whole day, looking occasionally after the cow, feeding the pig, weeding in the garden, or spinning in the house. As her family grows up, she can put the elder children to do some of these things; but if the woman goes out to work, the children are neglected, and the house is cold and comfortless; and the husband has a temptation to go to the ale-house (though this evil is much lessened, from the high price of necessaries, and in some districts, from the reduced number of public-houses). Before men can be made good, he observes, they must be made enterprising, and this is best by giving them an idea of propriety. In being enterprising, there is a chance of their becoming good members of society through principle; but if not, they may be harmless through interest; and we cannot conceive a stronger support to the police of any county, than the householders of it having business of their own to mind, and property of their own to defend. Though the rent of a cottage is generally an inadequate interest for the money spent in building or repairing it, yet the tenant is frequently willing to pay a higher proportionate rent per acre for land than the farmer does, and he is also frequently the
the most punctual in the payment of his rent. But, how-
over the balance may be in other respects, one consider-
able advantage will," he thinks, "always be derived from the
extension of this plan, in the reduction of the poor rates.
It, indeed, the 51 Eliz. c. 7, could have been acted upon,
or modified, rather than repealed, it may have prevented
the excesse of poor rates in the country parishes. It pro-
hibited the building of any cottages in the country, unless
there be set four acres of land, lying near the same, to be
continually occupied therewith, &c. &c."

And in further proof of the utility of the practice, the
fame writer adduces, on the authority of a letter from the
Rev. A. Allifon, rector of Kenley, the following interrelling
facts:

"With regard to the experiment in this parish," says
the rector, "it is much too trilling and too recent to de-
scribe any attention. Thirty acres were allotted to me
in the division of the common, and they were divided
into ten shares, to accommodate the poor people of the common
who had the largest families, at the fame rent that
was paid for the other part. It is only three years since
this took place, and he can say little, therefore, with re-
spect to the effects he most wished to follow from it. That
it has added to the comfort of the people in that time he
has every reason to believe, both from their own acknow-
ledgments, and the anxiety of the reit to pollese the fame
advantages. He thinks he may say also, that it has added,
in some measure, to their industry. The land in general is
in a better frite than any of that which was included at
the fame time. The poorfol amongst them have all carried
home, collected road-duff. burnt weeds, &c. and some of
them have certainly manded higher than any of the far-
mers in our parish. Two of them have built cottages at
their own expense, and thrown a little disposition to orna-
tment, by white-walking them, &c. In short a time,
these are at least not unpromising appearances. With re-
gard to the quantity of land which may be allotted to cot-
tages, without diminishing their industry as day labourers,
it will not be easy to determine. If he was to judge from
this parish, he should be disposed to think that more
than three acres might very safely be given. The most
decent, industrious, and well-doing of the lower people
among us, are four or five families, who have from live
to eight, or ten acres a-piece. This does not prevent them
from working constantly, either as labourers or in their
trades. They have brought up families without any parish
affixity, and their children are in general better educated,
better behaved, and set out better in the world, than any
others of the fame rank among us. These little farms, in-
deed, are always in graft, as he apprehends they will always
naturally be, when not exceeding these limits. The small-
farmers with us, of from 20 to 30 acres, who are in-
duced to keep something like a team, are much the poorest
and most wretched people among us."

It is added still farther by the author of the report, that "in setting these allotments at the current price, viz. 7s. per
acre, it was promised not to raise that rent in consequence of any
improvements the original tenants may make, which
would have the operation of a leaf in the time of his in-
cumbrances. A further promise also was helden out, that
a jury of farmers should look over the ten allotments an-
ually, and he who had improved the most should be ex-
cused paying rent for that year. It should be noted also,
that time is within a few miles of these cottages."

And in a farther communication from Mr. Harries, an
intelligent and able cultivator of extensive property, it is ob-
served "the building should be of a dimension to allow
two separate chambers. An acre of ground annexed to it
would admit of half being annually tilled with wheat, the
other half with hemp, potatoes, cabbages, and beans; these
would be a great assistance to the labourer in support of his fa-
mily; they would enable him to keep and fat a pig. This
situation would be still more comfortable if five acres of land
were added to it, as he could then keep a cow, and somewhat
increase his quantity of grain. A double cottage he would
generally recommend; there is some saving in the erection,
and they may mutually assist each other, for though violent
quarrels sometimes arise between such neighbours, yet reci-
proal interest from occasions a forgetfulness of past fal-
fences. He thinks there are more small habitations of this
kind in this county, than in any other within his observa-
tion. There should be at least two cottages to every 100
acres. The situation open to a public road, dry, and south
or south-east."

Those who are anxious to have more full information
on the advantages of this sort of small farms, may find
much that will interest them in an excellent paper on the
subject in the thirty-seventh volume of Mr. Young's "An-
nals of Agriculture."

And with the view of rendering the introduction and
elabiration of the cottage farm system, more easy, as well
as removing the different objections which have been urged
in opposition to it; the plan and arrangement given below
have been brought forward by Sir John Sinclair, in an in-
terrelling paper inserted in the fourth volume of "Commu-
nications to the Board of Agriculture." In this paper the fol-
lowing principles are chiefly kept in view:

1. "That the cottager shall raise, by his own labour,
some of the most material articles of subsistence for himself
and his family."
2. "That he shall be enabled to supply the adjoining
markets with the smaller agricultural productions; and
3. "That both he and his family shall have in their power
to assist the neighbouring farmers at all seasons of the year,
almost equally as well as if they had no land in their occu-
pation."

The writer supposes that "it can hardly be questioned,
that if it were practicable to have a number of cottagers of
that description, in every parish, it would promote, in vari-
ous respects, the interests of the public."

With respect to the extent of ground, which is necessary,
he says, "unless the experiment were fairly tried, it is im-
possible to state exactly the extent of arable land that may be
necessary, to enable a cottager to raise the articles generally
necessary for the support of himself and family; and to
keep a cow, some pigs, and poultry. Much must depend
upon the natural richness of the soil (though under the ma-
agement about to be proposed, almost any soil would, in
time, become fertile); on the nature of the climate; on the
size of the cow; on the industry of the cottager; on the
age and number of his family, &c. But he should imagine,
that three statute acres and a quarter, of good arable land,
worth from 20s. to 30s. per acre, would be sufficient. It is
proposed, that the three acres shall be under a regular course
of cropping. The quarter of an acre ought, if possible, to
be converted into an orchard, where the cow might occa-
sionally pasture, and where a pond ought to be kept in good
order, that it may have plenty of water at command. Were
the land of a quality fit for lucerne, perhaps two acres and a
quarter might be sufficient."

It is stated in regard to the implements, "that, so small
an extent of land, as either two or three acres, under cul-
tivation, excludes all idea of ploughing; and indeed, unless
the cottager shall manage the whole, in the simplest and

cheapest
COTTAGE.

cheap manner, there is an end to the whole system. It would require, indeed, four or five acres to keep a single horse, and the expense of purchasing horses, or even oxen, ploughs, and other instruments of husbandry, must be far beyond the abilities of a cottager; whereas with a spade, a hoe, a rake, a feythe, a sickle, and a flail, (a wheel-barrow omitted) which are all the instruments really necessary, he is perfectly competent to the management of his little farm." He remarks, that "ploughs might, perhaps, be hired; but on the whole, the spade-culture is infinitely preferable, and he would much rather rent a cottager hire ploughs to trench, than to plough for him."

In what relates to the course of crops, or the mode of cropping the ground, "the three acres proposed to be cultivated, should, he thinks, be divided into four portions, each containing of three roads, under the following system of management.

Roads.

Under potatoes, 2 roads, under turnips, 1
Under winter tares, 2 roads, spring tares, 1
Under barley, wheat, or oats
Under clover, with a mixture of rye-grafs

Total 11 roads.

The writer would also recommend a small quantity of flax, where the culture and management of the plant were known to employ the females, particularly in winter, and to supply the family with linen.

And, it is further added, that "some recommend the proportion, per acre, to be at the rate of one bushel of rye-grafs, to 12 bu. of red-clover; others, 14 bu. of red-clover, to half a bushel of rye-grafs.

"Other articles besides these might," he says, "be mentioned, but it seems to him of particular importance, to restrict the attention of the cottager to as few objects of cultivation as possible."

It is proposed, that the produce of the two roads of potatoes, shall go to the maintenance of the cottager and his family; and that the road of turnips should be given to the cow in winter, and during the spring, in addition to its other fare." It is observed, in "Sir John Macquen Peore's experiments," it was found, that half a road, or one-eighth of an acre, produced, for several years, as great a weight of potatoes, as was sufficient for a family of four persons. Four acres answered for 131 persons.

"The second portion, fown with tares, (the two roads of potatoes of the former year, to be successively fown with winter tares, and the turnip road with spring tares), might partly be cut green, for feeding the cow in summertime and autumn, but if the seafon will permit, the whole ought to be made into hay for the winter and spring feed, and three roads of clover cut green for summer feed.

"The third portion may be sown either with barley, wheat, or oats, according to the soil or climate, and the general custom of the country. The flaw of any of these crops, would be of essential service for littering the cow, but would be still more useful, if cut into chaff for feeding it.

"The fourth portion, appropriated to clover and rye-grafs, to be cut green, which, with the ailatience of the orchard, will produce on three roads of land, as much food as will maintain a cow and her calf for five months, namely, from the end of May, or beginning of June, when it may be first cut, to the first of November, besides some food for the pigs. It is supposed, that an acre of clover and rye-grafs, cut green, will produce 20,000 lb. weight of food for cattle. Three roads, therefore, ought to yield 15,000 lb. weight. A large cow requires 1 10 lb. weight of green food per day; a middling sized cow, such as a cottager is likely to purchase, not above 90 lb., consequently, in five months, allowing 1,500 lb. weight for the calf and the pigs, there will remain 13,683 lb. for the cow. Were there, however, even a small deficiency, it would be more than compensated by the road of land, proposed to be kept in perpetual pasture, as an orchard."

It is remarked, that the above "calculations are merely given as data for experiment. It must depend upon the leafr, whether the tares or the clover should be made into hay."

On the manner of keeping the family, it is, he says, "calculated, that three roads and eight perches of potatoes, will maintain a family of six persons, for about nine months in the year; but, according to the preceding plan, it is proposed to have but two roads under that article, for, however valuable potatoes are justly accounted, yet some change of food would be acceptable, and the cottager would be enabled, from the produce of the cow, and by the income derived from his own labour, and from that of his family, to purchase other wholesome articles of provisions."

And, that in regard to the feeding of the flock, it "appears from the preceding system of cropping," he says, "that ten roads of land, or two acres and a half, are appropriated to the feeding of food for the cow in summer and winter, besides the pasture of the orchard; and unless the season should be extremely unfavourable, the produce will be found not only adequate to that purpose, but also to maintain the calf for some time, till it can be sold to advantage. It is indeed extremely material, under the proposed fyltem, to make as much profit of the calves as possible, as the money thus raised, will be a resource, enabling the cottager to replace his cow, when a new one must be purchased. And for the winter provision of the cow, which is the most material, because summer food can be more easily procured, there is the produce:

1. "Of about three roads of tares made into hay.
2. "Of three roads of straw, deducting what may be necessary for litter; and if dry earth be put into the cow's hovel, and removed from time to time to the dunghill, little or no litter will be necessary.
3. "Of one road of turnips.
4. "The whole being sufficient for seven months in the year, namely, from the 1st of November to the 1st June; and during the remaining five months, the pasture of the orchard, some of the winter tares, and the produce of three roads of clover and rye-grafs, will not only suffice, but will furnish a surplus for the calf, if it is kept for any length of time, and some clover for the pigs." He observes, that in a pamphlet just published on the culture of potatoes, by Richardson, the following mode of applying the refuse potatoes, to the feeding of calves, is strongly recommended."

"Take two gallons of small potatoes, wash them clean, put them into a pot of boiling water sufficient to cover them, and let them boil till the whole become a pulp; then add more water, and run the whole through a hair sieve, which will produce a strong nutritive fluid. At first, use a very small quantity, warmed up with milk, to make it palatable to the calf, and increase the quantity daily, till it becomes equal. A quart of potatoe gruel, and a quart of scalded skimmed milk, will be sufficient for a good meal, which should be given warm three times a-day."

"The inferior barley, potatoes, &c. will, of course, be given to the pigs and the poultry."

On the value of the produce, it is observed, that "the land thus managed will certainly produce, by the means of the extra indultry of the family, and at a small expense, a moi
a most important addition to the income which the cottager may derive from his ordinary labours. For instance,  

1. The orchard (after the trees become fruitful) will probably yield per annum  
   10
2. Three rods of turnips and potatoes  
   4
3. Eighteen bushels of barley, at 4s.  
   3
4. The cow and calf  
   7
5. Hogs  
   3
6. Poultry and eggs  
   2

Total 21 2 0

He says, that according to Mr. Kent’s calculations, a cow should produce six quarts of milk per day, worth 1d per quart, equal to 3s. 6d. a-week, or 2l. 2s. per annum, letting the profit of the calf against the loss sustained when the cow is dry; but it is better to be rather under than over the mark.

And, that where wheat can be raised, instead of barley, the profit would be still more considerable. Opinions will differ much, regarding the value put on each article, but that is of little consequence, as the total cannot be accounted too high.

In respect to the time required for cultivating the land, it is supposed, that the quantity of land intended to be cultivated, will not materially interfere with the usual labour of the cottager. It will only require to be dug once, and is then fit to be cropped. It is proposed, that only nine rods should be annually cultivated, (the remaining three rods being under clover and rye-grass) and nine rods may be dug in the space of about 550 hours, or at the rate of 62 hours per rod. This might be done at bye hours, (more especially when the family of the cottager shall be somewhat advanced, and consequently more able to furnish assistance,) but supposing that the digging, manuring, harrowing, &c. will require twenty entire days, per annum, in addition to the bye hours, and allowing sixty days for furlongs and holidays, there will remain 285 days for the ordinary hand labour of the cottager, which, at 1s. 6d. per day, would amount to 21l. 7s. 6d.; the earnings of the wife and children, may, at an average, be worth, at least, 4l. per annum more. This is certainly a low calculation, considering how much may be got during the hay and corn harvests; but even at that moderate estimate, the total income of the family will be as follows:

1. Produce of the farm  
   21 2 0
2. Labour of the cottager  
   21 7 6
3. Earnings of the family  
   4 0 0

Total 46 9 6

With regard to the buildings, “it is impossible,” he says, “to calculate the expense of building a cottage, as so much depends upon its size, the place where it is to be situated, the materials of which it is composed, the price of labour in the country, and a variety of other circumstances. On this important subject, much useful information is given above in speaking of cottages.” See Cottage. “But it is proper,” he thinks, “to observe, that no expensive additional buildings will be necessary, in consequence of the proposed system.” A shed or hovel for the cow cannot occasion any additional charge, and a small barn, of the simplest and cheapest construction, may be of use, not only for threshing the crop, but also for securing the hay, and making it to more advantage, in the ration should prove unfavourable; if the corn is put up in small flacks, the barn may be made of very moderate dimensions.”

In relation to the rent, and balance of income, he remarks, that “the rents of cottages and of land vary so much in different parts of the kingdom, that it is difficult to ascertain an average; but if the cottage shall be let at 3l. per annum, the land at 2s. per acre, and the orchard at 10s., the whole will not exceed 7l. 15s. The cottager will also be liable to the payment of some taxes, say to the amount of 2l. 5s. more. Hence the total deductions would be about 9l., leaving a balance in favour of the cottager of 3l. 9s. 6d. Considering the cheap rate at which he is furnished with a quantity of potatoes equal to several months consumption, and with milk for his children, surely with that balance he can find no difficulty not only in maintaining himself and family in a style of comfort, but also in placing out his children properly, and laying up a small annual surplus, that will render any parish assistance, whether in sickness, or old age, unnecessary; and thus he will be enabled to preserve that manly and independent spirit, which it so well becomes a British cottager to possess.” But he adds, “that the different expense of fuel in the various districts, will, in fact, greatly affect the annual surplus.”

In regard to the advantages of the proposed system, he concludes, “the advantages which may be looked for with confidence from the proposed system, are that, in the first place, the land poifoued by the cottager would be completely cultivated, and rendered as productive as possible. The dung produced by the cow, the pigs, &c. would be amply sufficient for the three roads under turnips and potatoes, which would afterwards produce, 12 oats, 2d barley, and 3d clover, with a mixture of rye-grass in regular succession, without any additional expense. The barley should yield at least 18 bushels, besides 3 bushels for feed; and if wheat or oats are cultivated, in the same proportion. The milk, deducing what may be necessary for the calf, and the cottager’s family, might be sold in its original state, if there should be a market for it, or converted into butter, for the purpose of supplying the neighbouring towns or villages. Such cottagers also, might certainly lend to market both eggs and poultry.” And that “2. It is hardly possible to suggest a measure more likely to promote the benefit of a numerous and valuable body of people. The system of keeping cows by cottagers which has been found so advantageous in the grazing districts, may thus be extended over the whole kingdom; and indeed, if the above plan is found to answer in place of four or five acres employed in feeding a single cow, it would be much better, even in the grazing counties, to restrict the land to a smaller quantity, under a little mode of management; for thus, not only the cow, but also the cottager himself and his family, would, in a great measure, be maintained by a little surface of soil.” And, “3. It is supposed of infinite consequence to establish the practicability of this system, in the means of removing a most unfortunate obstacle to the improvement of the country. It is well known to be the only popular objection to the inclosure of our waste lands and commons, that, while unclosed, a number of cottagers are enabled to keep cows, by the means of their common rights, and that their cows disappear when the commons are inclosed. If so small a portion of land as 34 acres, when improved and properly cultivated, can enable a cottager to keep a cow, even to more advantage than with a common-right, which can hardly be doubted, as he is enabled to provide winter as well as summer food, there is an end to that obstacle to improvement. Indeed, if sufficient attention be paid to the principles above detailed, the situation of the cottager, in
The rotation then begins as at first, lot A, might continue in natural grass the first season, and diminish the labour of that year."

It is clear, that "the exact period when the different crops should be dug or sown cannot be ascertained; because it varies so much in different counties, and depends upon the seasons: but according to the above rotation, the labour of digging the various crops is diversified as much as possible, so as not to interfere materially with the other occupations of the cottager. At no period would it be necessary for him to do more than two roods a month: and both he and his family will labour with much more satisfaction and dispatch, when they work for themselves than for another. In case of necessity, the cottager might hire some of his neighbours in digging, which would be much better than hiring a plough. If a cottager under this system could not work as a common daily labourer, he might, at least, answer as a useful labourer by the piece."

It is evident, that, should this system of cottage-farming be found to answer the intention on sufficient experience, it might, by due regulation in what respects situation, and the method of culture, be capable of equal application on arable as on grazing land, and by that means be rendered general over the kingdom, which is a circumstance of the utmost importance. Its great advantage in promoting the comforts of the cottager, increasing his happiness and attachment to his situation, and in rendering him more independent and respectable, has been long known and acknowledged.

**Cottage Garden, a term applied to such portions of garden grounds as are attached to cottages in some counties.**

The practice of attaching small portions of land to these has been now found by experience to be of considerable utility to the labourer, as enabling him to support his family with greater ease, and preventing his becoming burdensome to the parish. See Cottage Farm.

It is remarked by Mr. Rudge, in his excellent "Survey of the County of Gloucester," that many of the cottages in that district "possess in a greater or less degree, this useful appendage; few, however, in a quantity sufficiently large to effect any great advantage. To what fibre, indeed, cottage gardens may be extended, with safety to the interests of agriculture, can only be ascertained by long and repeated experiments on a large scale. It has been already observed, that they ought not to be so far extended as to occupy too great a portion of the labourer's time, his attentions being wanted elsewhere. See Cottage.
"The interval between Lady-day and Michaelmas is," he says, "the portion of the year in which the labourer will derive spare time from the regular engagements of the day; and nine hours for each week are the full average-leisure that can be admitted on calculation. Of one hundred and eighty-six days twenty-six will be deducted for the Sundays, and during two months at least every hour will be wanted for the harvests, so that the whole which the labourer will be able to employ in his own land, will amount to about two hundred and seventy-three hours, or twenty-two days and three quarters. Supposing the garden to comprehend half an acre, or eighty perch, and that a good workman can dig ten perch per day, it will then require eight full days for digging, and another for planting. When the seeds are properly got in, the remaining time will not be more than enough for weeding, hoeing, digging, and harrowing, exclusive of the affluence which may be expected from the family. From the wife, indeed, no great help can be had, as she will find her time fully engaged in domestic employments; and from the children not much more, since, if they are old enough to undertake any thing of labour, they will be useful to the farmer in various ways, and bring home some pecuniary aid to the general flocks: the main dependence therefore is on the labourer himself; and he would probably," he thinks, "be equal to the management of a garden of this size with ease, if he could employ the quantity of time allowed, on the premised calculation, to the best advantage; but as it consists of fractional parts, and his greatest leisure will be when the spade is left wanted, there will be some difficulty in adapting it to the necessities of his garden. Two-thirds of the seeds and plants will require an early attention; potatoes will bear later planting, and of course suit him better. These difficulties are not insurmountable, and it is probable that half an acre of land may," he says, "be cultivated as garden, without improperly interfering with the ordinary labour. He should have considerable doubts, as to the practicability of adding an acre more of arable land to the cottage, under any circumstance, with the prospect of advantage, if the fact had not been ascertained from the unquestionable authority of Thomas Eecourt, Esq. in "An Account of the Result of an Effort to better the Condition of the Poor," etc. "The scale of the experiment is, however," he says, "too small to admit a general inference; and the local advantages are such as cannot be predicated upon in many situations. It will, however," he supposes, "imulate the efforts of other gentlemen, in imitation of a most laudable example."

"Rewards, as an encouragement for the best managed gardens, have been proposed. The premium, however, should be given to him who, without diminishing the attention due to the farmer, with the least loss of time, regular earnings, as well as the least encroachment on Sabbath duties, has cultivated his garden with superior neatness and success. Loss of time is a material consideration, because every day which does not bring in its proper return of money, is really lost to the family, and will occasion a reduction of some articles necessary to their comfortable subsistence."

"The industrious cottager, who has an eye to all these circumstances, will," he says, "employ in his garden the extra hours, before he begins, and after he leaves off, the regular work of the day. This becomes a real saving, being so much gained from idleness, and so much added to the stock of comforts, which others, under the influence of a lounging and indolent disposition, throw away."

Therefore, concluding that at present half an acre will in few instances be exceeded, and that it will be in most cases sufficient for the labour of one man, without interfering with his usual engagements, he Shall draw the plan of a cottage's garden, with the probable method of managing it to advantage.

It is, however, previously remarked by the intelligent writer, that "wheat should not be among the productions of small inclusions, because it is a lure to the depredations of small birds; and the trouble of the different processes, before it is ready for the mill, probably balances the profit, besides the difficulty of finding manure sufficient to keep the land in a good state of cultivation. Plantations of beans and peas, cabbages, and potatoes, will assist the cottager in the keeping of a pig more than any other vegetable. In summer, the refuse of the cabbage, with wath, &c., will be sufficient for food; the straw of the beans and peas, with the haulm of the potatoes, will supply litter; while the leas valuable of the potatoes boiled or steamed, the gleanings of the harvest, and a little additional corn, will fatten him. If field peas or beans be cultivated, a part may be gathered green for eating, and the remainder left to ripen for the use of the flye. By this management, manure will be made for the land; as almost the whole of the produce will be again returned to it in the flate of dung."

"The ground is supposed to be of good quality, very fenced, and adjoining the house. A small portion may first be allotted to herbs and small seeds; then the remainder parted into three divisions; one for carrots, parsnips, onions, cabbages, borecole, &c.; the second for beans or peas, according to the nature of the soil; and the third for potatoes. The crops follow succeed in regular rotation, and the manure always used with the potatoes. The occupier should be supplied with seeds and plants for the first year; after which he may contrive, from his own crops, to keep on a succession, or fell enough for necessary change."

"One third of the ground may," he says, "appear large for what are usually called culinary productions; but it is of great consequence that a poor man's family should be well supplied with vegetables; and if there be an over-floating, nothing will be lost, as it will afford a present supply for the flye, and will serve potatoes for winter use."

"The produce may be calculated as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beans after deducting for next crop</td>
<td>4 5 buches.</td>
</tr>
<tr>
<td>Potatoes, dtn</td>
<td>4 5 buches.</td>
</tr>
<tr>
<td>Cabbage &amp; borecole, besides carrots, &amp;c. 500 plants.</td>
<td>6 17 0</td>
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"Fruit trees may also be planted," he says, "in the quarters, and gooseberries and currants on the edges of the border. Planting fruit trees in the hedges, or even near them, is objectionable, because it furnishes a temptation to theft and plunder, and also the certain caufé of injury to the fence. The latter is a confideration of great importance, as a good fence to the cottager is more efpically needful, since he is obliged to be abfent from home a great part of the day, and sometimes takes his family with him into the fields. During this abfence, his garden, wathes well fenced, is subject to the inroads of thieves, and pigs, and geefe, which are loote upon the common."

It has likewise been fuggested by the writer of the Agri-cultural
COTTAGE PIE, a name sometimes applied to the buildings of this fort, which have been lately constructed with materials of the rammed earth kind; a method which has been long employed in France. This is a mode which, when well executed, stands very well, it is said, and is at the same time cheap. All forts of the stronger loams answer the purpose; and light sandy earths may be rendered suitable, by the addition of a small portion of clay; though perfect clay is not proper for this use, from its not ramming sufficiently hard and compact, and being liable to crack in drying. In this fort of work the chief circumstance to be regarded is, to have these matters subjected to a due degree of compression, either in cases contrived for the purpose, or by means of heavy cast-iron rammers. See Piax: Buildings.

COTTAGER, a term which is commonly applied to a farming or other kind of labourer, who inhabits a cottage. The inhabitants of this description may in general be considered as of four different sorts: 1. The proprietors of small houses of the cottage kind, either by purchase or inheritance; 2. The proprietors of cottages built by themselves, or with the partial aid of their neighbours, on wales or commons, at their own expense; 3. The renters of cottages in manufacturing districts and situations; and, 4. The renters of them in small country towns and villages. They are, however, principally the second and last descriptions of these cottagers who are to be considered in this place, as being connected with the proprietors of ground, and the business of the farmer, or the management of land: the first being in some measure independent, fo as not to render them objects of parochial attention; while the manufacturing cottagers, from being capable of deriving wages from the different arts in which they are employed, can seldom or never be employed in the culture of ground.

It is obvious that labourers of this description are indifferently necessary to the farmer, and without them much of his business must remain unperformed, and of course much loss be sustained, not only by him, but the nation at large. The objections which have, therefore, been made to the encouragement of this useful class of society, which has been emphatically termed the "nerves and sinews of agriculture," are by no means well founded.

It has been well remarked by Mr. Bratton, in a paper in the first volume of the Communications to the Board of Agriculture, that "nothing is more ruinous to the interests of the farmer, than to keep a greater number of servants than he really has occasion for; yet, in all farms, it is necessary there should be a fixed establishment of servants, in proportion to the extent and nature of the farm. Every one above that number may," he says, "be considered as a supernumerary, incurring an unnecessary expense of at least fifteen or twenty pounds per annum, which will fall very heavy on the profits of a small farm. This fixed establishment, however, is by no means sufficient to carry on the whole operations of the farm at all seasons of the year. There are certain times and certain operations," continues he, "that require additional hands; and fortunate is the farmer who can, on every such occasion, command a sufficient number of hands to expedite and to accomplish his labours. It generally happens too, that when one farmer has occasion for a great many additional hands, all the other farmers in the neighbourhood have the same. How then," he says, "are his operations, in this case, to be carried on? He must have hands, otherwise he cannot proceed, or, at least, may suffer a very material loss by delay. There are only three sources," he supposes, "from whence he can expect assistance: from town's people (if near a town), from villagers, or from cottagers. The townswoman considers herself totally independent of, and unconnected with, the farmer; consequently, whoever gives him the belt price, that is, bribes him high, will purchase his labour: but, as it generally happens that those who will accept a bribe are little to be depended on, high wages, a great bulle, and little work badly executed, are therefore too often the consequence of applying to that source. The villager is also," he says, "independent of the farmer, although somewhat more connected with him than the townswoman. His demand, however, may not be too exorbitant; yet, being more accommodated to country labour, he will, no doubt, be of more utility, if he can be prevailed on to give his assistance. But the cottager is," he conceives, "the main resource upon which the farmer can best depend: if, therefore, he is fortunate enough to have several well-peopled cottages upon his farm, he will have little to fear from a want of hands on extraordinary occasions." But he forgets, that "a ready supply of labourers is not the only advantage a farmer may reap from cottagers. He will have, at an easy rate, all the manure they make, except what they themselves may require for their little gardens; and they will often, perhaps, be the purchasers of several commodities he may have to dispose of, and fave him the trouble to carry them to a more distant market. They will also sometimes have occasion for an additional quantity of ground, besides their gardens, for which they will perhaps be enabled to give a better rent than even the farmer himself can make of it, by keeping it in his own hands, or than can be expected from those at a distance; for, in general, land is the more valuable to the policeman, the nearer it is to his place of residence; and particularly so to the cottager, who can labour it at his spare hours, or when he is not otherwise employed."

It is likewise further stated, "that a nation is said to be rich in proportion to its population; as," he thinks, "it is in a great measure with an estate, or a farm; for, the more numerous its inhabitants, the more easily will it be cultivated and improved."

It is therefore conceived, that "the erection of cottages is an object of great importance to the farmer as well as the proprietor; but it is necessary for the mutual advantage of both parties, that the landlord and his cottagers should be on the best of terms; that he should regard them as a part of his own family, and that they should look up to him as their landlord and friend and protecteur. Every cottager should therefore," he thinks, "consider, that in promoting the interests of his landlord, whether the proprietor or tenant
nant of the farm, he is, at the same time, promoting his own; for a landlord has it much in his power to serve and oblige his cottagers in various ways, as they themselves must be sensible of. If, therefore," continues he, "they shew that attachment and preference to his interest, which he has a right to expect, there is no doubt he will do every thing he can to render their situation as comfortable as possible: but as it may sometimes happen that even the favours he may do them are not sufficiently binding on people of an ungrateful or refractory disposition, perhaps the most effectual way to secure to himself those benefits he is justly entitled to expect from their residence on his farm, would be, it is suggested, to make his rents conditional; that is, in case they do not give their satisfaction, when wanted in harvest, or any other pressing occasion, they should pay so much more, and the farmer or proprietor to have it in his option to remove them at the full term of Candlemas, or Whit-Sunday, at which time the produce of the preceding crop will probably be removed from the ground they occupy, and their successor will have time to prepare for the ensuing crop.

If it were "settled on some such terms as these," he conceives, "the farmer would find it greatly to his advantage to have as many cottages on his farm as possible; and it having a long leaf, it would even be his interest to affit the proprietor, or the new occupier, to improve the materials, or otherwise, as they can agree. In every spare corner, therefore," says he, "of a dry situation, of easy access, well sheltered, and near good water, a cottage should be built, and every encouragement given that can render the cottager and his family happy and comfortable."

It is added, that "in many parts of the kingdom one great obstacle, at present, in the way of settling cottagers, is the poor laws, as they now stand; every cottager and his family being supposed entitled to certain claims upon the parish in which they reside: but this might perhaps," he thinks, "be obviated by passing a law, enacting, that in future, with certain exceptions and provisions, no cottager, or others, shall be entitled to make any such claims; or it might even, in some degree, be fixed by agreement with the cottager, at the time of his taking the cottage, by his entering into an obligation for himself and his heirs to renounce all claims whatever upon the parish. Such a law, or such an agreement, might, in all probability," he concludes, "act as a sort of cement, or cemently; and might induce every father of a family to exert himself to make some kind of provision for his children or widow, in case of his death. Whereas, at present, by far too many take no sort of pains whatever to do so, being precipitated with the idea, that, if reduced to beggary, the parish will provide for their families at their decease: and, trusting to the poor's funds, when often they have no occasion to do so, they squander away their little pittance at the ale house, and dissipate all they earn as fast as they receive it."

By some such regulations as those slated above, he thinks, "this great obstacle towards erecting cottages might be totally removed; and besides, the real necessities of charity, if their funds were properly managed, would be more amply and comfortably provided for; and the poor's rates, at the same time, might be greatly diminished; and that heavy and intolerable burden upon the farmer and the community would consequently be more easily sustained. It is further suggested, that "every cottager should have a small garden annexed to his cottage, sufficient to raise vegetables for the family use."

It is conceived, that "about twenty-five or thirty perches of ground, properly managed, would answer that purpose. Whatever more land the cottager may have occasion for, he should, it is contended, be dependent on the farmer for it."

The striking difference which is discoverable in cottagers which have such garden grounds attached to their cottages, and those which have none, in respect to their habits and conduct, has been well noticed by the Rev. Mr. Townsend, who says that the former are, in general, found sober, industrious, and healthy, while the latter are too frequently drunken, lazy, vicious, and diseased. And the reason, he conceives, to be that, "one fills up all his time with useful labour, whilst the other, for want of occupation, takes refuge in the ale-house, where he dissipates his scanty pittance, and destroys his health."

And another striking difference to be noticed is, he says, "between those who have freehold tenements, and their neighbours who are obliged to rent: in the former we commonly observe, that openesses and honesty which are seldom to be seen in men who are delitute of property. The peasant, whose ancestors built a cottage on the waste, with a sufficient garden, and the right of commonage for his cow, if he retain this little patrimony, brings up a numerous family without being reduced to the necessity of asking alms from his parish. This man acquires habits of sobriety and industry, and his property is a pledge to the community for his good behaviour. Those good qualities are transmitted to his offspring; and when his children go out to services, they, like their parents, are distinguished for ingenuous conduct; they resemble the sons of freemen, whilst the immediate dependants of those who have no freehold, too frequently have all the dispositions of a slave."

There can be little doubt but that great advantage may be derived by cottagers from portions of land being attached to their dwellings in the above points of view, as well as many others. The humanity, policy, and vast benefit of this system have been strikingly shown in the thirty-seventh volume of the Annals of Agriculture by Mr. Robert Gourlay. The interests of agriculture indeed imperiously demand that every possible encouragement should be given to this necessary and important class of men. See COTTAGE Farm.

COTTAM, in Botany, Riched. See Mentha perfoliata.

COTTAN, in Geography, a town of Aisa, in Little Bucharia; a place of considerable trade between the Tartars and the Indian merchants.

COTTIE, ROBERT DE, in Biography, an eminent French architect, was born at Paris in 1656, and made director in the academy of architecture in 1699. In 1708 he was elected vice-protector of the academy of painting, and shortly after first architect to the king and superintendent of the buildings. The works which owe to Cotte all their elegance are very numerous at Paris, Verailles, &c. Among these were the grand altar of the cathedral at Paris; the fine Ionic colonade of Trajon, and the new building at the abbey of St. Denis: besides the many important works which he executed in France, he was employed by several German princes in the erection of palaces and country seats. He died at Palfy in 1755. He was a man of great simplicity of manners, free from all affectation, obliging and virtuous. His various works are distinguished for elegance, and an exact adherence to the rules laid down by the ancients, whom he paraded in ornament, and in the happy distribution of his edifices. He introduced the fromion of mirrors over chimney pieces.
COTTER, in *Rural Economy*, a term often provincially employed, to signify a kind of iron key, to be passed through the eye of a bolt, when used as a fastening for any purpose.

COTTERAL, another term made use of in different allusions, to signify the same sort of fastening.

COTTES, or COTTS, in *Antient Geography*, a promontory of Africa, not far from Tungus, and the draifs of Hercules, mentioned by Mela, Ptolemy, and Strabo. It is also called Ampelusia by Mela. From Mela and Bochart it appears, that Cotes or Ampelusia were words of the same significations in the Phoenician and Greek languages, and that they were deduced from the grapes with which the promontory abounded. It is now called Cape Spartel. See Cotta.

COTTI, an ancient warlike people of Germany, who inhabited part of the Sicilian coast, from the Harz mountains to the Rhine and Weser. Among them were comprehended the Mattiaci, whose capital was called from them Mattiacum, and by some Mattam, by some, it was supposed to be Marpurgh, and by others Baden, on account of its hot waters.

COTTLE, a place of Cisalpine Gaul, between Laumelum and Carbantia, according to the itinerary of Antonine. It is now a village of the Milnsele, called Cozo.

COTTIAN AIR, See Alps.

COTTITIARA, a town of India, on the sea-coast, E. E. S. of Elancon. Ptolemy represents it as the metropolis of the nation denominat Ali.

COTTILAB, in Geography, a town of Hindostan, in the country of Mewat; 82 miles S. of Delhi, and 72 W. of Agra. N. lat. 27° 24'. E. long. 77° 7'.

COTTINGHAM, a village in the East Riding of Yorkshire, in the hundred of Harthill. In 1802, it was in contemplation to cut a canal from the Humber, at the port of Hull to this place. See Canal.

COTTIS, in *Antient Geography*, a town of India, on this side of the Ganges. Ptolemy.

COTTIUM, a place of Gallia Narbonensis, according to Strabo; situated towards Piedmont.

COTTIWAR, in Geography, a circuit of Hindostan, in the country of Guzerat.


COTTON, Sir Robert, in *Biography*, an eminent antiquary, born at Denton, Huntingdonshire. Jan. 22, 1570, was admitted in Trinity College, Cambridge, where he took the degree of Master in Arts: but it is not known at what place he laid the foundation of his knowledge either as a scholar or an antiquarian. From Cambridge he went to reside with his father, where he remained but a short time when he came to London, and was admitted a member of the Society of Antiquaries, which had been established in 1590. He now prosecuted his favourite study with great diligence and success, and began to collect ancient records, charters, and other MSS. which at his death proved to be the choicest collection of the kind ever seen in this or any nation. About the year 1600, he accompanied the celebrated Camden to Carisbrooke in order that they might examine more particularly the Cast's wall. In the same year he wrote "A Brief Account of the Question of Precedence between England and Spain," at the desire of Queen Elizabeth, who was sending her Ambassador to Boulogne to treat for peace with the archduke Albert. Early in the next reign he was on account of his great learning and high merit created a knight, and during the whole of King James's life he was regarded and consulted as an oracle by the privy counsellors upon every difficult question relating to the constitution. In 1608, he was appointed one of the commissioners to examine into the state of the navy, which had been neglected since the demise of the late queen; he drew up a memorial, on this occasion, of their proceedings, to be presented to the king. He was employed about the same time on other subjects relating to the prince Henry; but chiefly upon "The Collections," he was ordered to make relation to the revenue of the crown; and the manner and means how the kings of England have from time to time supported and repaired their citadels." New means were devised to supply the wants of the monarch; andisons, however, was he so much pleased, as with that of creating a new order of knights called baronets: Sir Robert, who had been of so much service in the affair, was chosen to be one, being the twenty-ninth that was created. He was soon after employed by the king to write animadversions upon Buchanan's and Thirnanus's accounts of the behavior and actions of Mary queen of Scots, and to give a different turn to them from what had been done by those two famous historians. In this and the next reign he was employed on various other topics, in most of which he sided with the views of the foreigners by whom he was employed; but when the project of raising the value of the coin was submitted to him, he gave it the most serious and decided opposition, and showed in a speech of great length before the privy council, what a disunion such an alteration would be to his Majesty, and how great a loss it must prove to the subject. For this conduct it is probable that he was regarded with a folicitous eye by an arbitrary court, and in the end was imprisoned and ill-treated, because he had shown a zealous adherence to some of the principles of the constitution. In 1679 he was ordered to attend the privy-council, and his library was sealed. This ill-treatment, which no man appears to have felt deferred, preyed to much upon his spirits that he never recovered; on his dying bed he imputed the shortening of his life to the loss of his liberty, and his library; for indeed it was restored to him, but it does not appear that he ever obtained the free use of the latter: such was the reward which the ill-fated Charles referred for a tried servant and faithful friend. He died at his house in Weilmünster, May 6, 1681, soon after he had completed his sixtieth year. Besides what he published during his life, he left a number of treatises in MS. which were printed in a collection of pieces written by eminent antiquaries. During his blest days, this great and worthy man was the generous patron of all the lovers of antiquities, and his house and library were open to ingenious and inquisitive persons. To him indeed men of learning have been highly indebted ever since his time, by the valuable library which has long made one of the noblest collections in the British Museum. This library consists wholly of MSS.; many of which being in loose skins, small tracts, or very thin volumes, when they were purchased, Sir Robert caused several of them to be bound up in one cover. They related chiefly to the history and antiquities of Great Britain and Ireland, though the ingenious collector refrained nothing that was curious or valuable upon any point of learning. Dug. Brit.

COTTON, Charles, known as a burlesque poet, was born in 1620. He was educated at Cambridge, after which he travelled into foreign countries. During the life of his father, though married, he lived with him; and at his death succeeded to an estate, which, on account of the liberality
of his disposition, was never equal to his wants. He entered the army, but before that, he had been known as a translator, though probably without much gain as an author. His most celebrated work was "Scarronides, or Virgil Travelvil," and this appeared in 1674. It was extremely popular, and passed through fifteen editions. Of his translations, the most valuable was one of Montaigne's essays. He was married a second time, and by his wife, the countess-dowager Ardagh, he came in for a fortune of 1500L. per annum, which, nevertheless, was unable to refuge him from indigent circumstances. Besides the burlesque on Virgil, he attempted the same with regard to Lucian's dialogues, which was popular, the eighth edition having been published in 1771. Thrice, a biography may be supposed "to Virgil," while they have the same humour, and the same licentiousness." He is supposed to have died in 1687; and about two years after a collection of his poems was published. He was of a sociable, open, and generous temper, but imprudent and licentious. He was the friend and associate of Isaac Walton, the well-known angler, and to his treatise on "Angling," Cotton added a supplementary piece, containing, "Inscriptions how to angle for a Trout or Grayling in a clear Stream." Biog.Brit.

COTTON, or COTTON, Peter, a French Jesuit, born in 1654, at Neronde, near the Loire, after passing through the usual introductory studies, removed to Milan, and thence to Rome, where he went through a theological course. On his return to France he became a very popular preacher, distinguished by his zeal and success in bringing over converts to the Catholic faith: among these was M. Lefliigers, who was afterwards cardinal of France, and through whom he was recommended to Henry IV. who made him his confessor. In this situation he might have been raised to the dignity of cardinal, but he preferred the honour he kept with him, "Virgil," with a speech of reclaiming his fellow creatures from what he conceived the error of their ways. The monarch was reproached for paying too great a deference to Cotton, and a pun upon his name was the common joke of the times, "Our prince is good but has Cotton in his ears." Henry himself asked the Jesuit, whether he would reveal the confession of a person determined to assassinate him, to which he replied, "No; but I would place my body between you and him." It is not certain but a confidence in such professions might be the means of putting that excellent monarch too much off his guard, who at length fell a victim to a vile assassin. After the murder of that unhappy prince, Cotton became confessor to the young king, Lewis XI., in which office he continued seven years, when he retired from court to Lyons. In 1626, he was appointed provincial in the Isle of France; but was shortly afterwards summoned to appear before the parliament of Paris, who were fully alarmed by a publication issued from the pen of a brother Jesuit, in which the power of the pope was exalted above that of kings. His answers on this occasion were such, that the parliament felt themselves bound to issue an edict against the whole society. This was not what Cotton had expected: he trusted that his own reputation would have sanctioned all the principles avowed or concealed by the order. When he found himself disappointed, and the motives of the whole society scrutinized and exposed, he was so much hurt that he fell ill and died in a few days, in his sixty-third year. He wrote several pieces of a general nature: others on controversial subjects, a volume of sermons, and a letter to shew the conformity of the doctrine maintained by the Jesuits with the doctrine of the council of Trent. Moreri.

COTTON, in Commerce, the soft and beautiful vegetable down which forms the covering or envelope of the seeds of the gossypium or cotton plant. It is the spontaneous production of three parts of the earth, and is found growing naturally in all the tropical regions of Asia, Africa, and America, whence it has been transplanted and become an object of cultivation in the southern parts of Europe.

It is brought to us from the West India islands, the Spanish, Dutch, and Portuguese settlements on the coast of South America, and the isles of Bourbon and Mauritius in the East Indies. Georgia, and the southern states of North America, also annually produce great and increasing quantities. The islands and shores of the Mediterranean have long flourished Europe, and within these few years, the privileged merchants of India have brought hither considerable quantities from Surat, Madras, and Bengal. The cotton from these different quarters of the globe varies considerably in the colour, length, fineness, and strength of its fibre. It is the produce of several species and varieties of the gossypium, and without wholly adopting the hypothesis of Quatremere Dijouval, we may admit, that difference of climate has considerable influence on the texture and quality of the cotton.

According to the observations of that gentleman, crowned by the Academy of Sciences of Paris, the produce of the countries immediately under, or near the equator, is to be considered as the type of excellence, and is distinguished by its fine silky fibre, the depth and peculiarity of its colour, and the height and permanency of the plant. In proportion as we recede from the equator, says our author, these strong marked characters disappear, the fibre becomes coarse, its colour perfect white, and on the shores of the Mediterranean, we behold the lofty and flourishing plant of Hindoostan, dwindled down into a flunted annual herb.

The exceptions to this system, from a comparison of the cotton of South America and the West Indies, with that of India and the Levant, are repelled by M. Quatremere Dijouval with some ingenuity; but his observations and reasonings are too general; and we shall presently see that this system of graduation in size, colour, and fineness, from the equator to the poles, has no existence in nature, and is disproved by the characters we shall adduce of the principal varieties of cotton at present known in commerce.

It is true, that the finest cotton we have any knowledge of, is the produce of the tropical countries, as well as the deepest coloured. The delicate and unrivalled fabrics of the East, and the genuine nankeens of India and China, afford a proof of this. Yet the cotton from which they are produced, is retained at home to supply the native manufactures of the country, and is wholly unknown in commerce. The cotton of Bengal, Madras, and Surat, such as is brought in quantities to Europe, is scarcely tinged with yellow; and Siam, famous for its nankeen, is equally so for its fine white cotton, which has long been transplanted to the West Indies. The sea-coast of Georgia, and its dependant isles, though situated in latitude 33° north, ten degrees beyond the tropic, produces cotton superior in quality to the colonies of Guiana directly under the equator, whilst the inland districts of that province, and the country fourt of it, down to the mouth of the Misstipili, produce a cotton of greater whiteness, and far inferior in strength and fineness.

Cotton is distinguished in commerce by its colour, the length of its fibre, and its strength and fineness.

White is in general considered as characteristic of secondary quality.
quality. The cotton of Smyrna, Cyprus, Salonica, and all
parts of the Levant, is distinguished by its want of colour.
The chief part of that from North America is also white,

The cotton of the West Indies and of South America is called
yellow, but the colour inclines more or less to cream colour.
That from India has a slight tinge of Aurora. The fine
Sea Island Georgia, though not properly a yellow cotton,
has a faint but decided tinge, which distinguishes it from the
white cotton of the same country.

In the following list are enumerated the chief, and nearly
all the varieties of cotton used in this kingdom, with short
notice of their quality and value.

North American Cotton.

Sea Island Georgia—is the produce of the coast of
Georgia, and the small islands contiguous and belonging to
it. It has a long and fine staple, but more or less silky, stained
or dirty, on which account no other cotton varies so much
in price. The belt is preferred now to every other kind, and
is often sold at very high prices to the manufacturers of
lace.

Upland, or Bowed Georgia—is the produce of the
island districts, and either from the nature of the soil, or
defective cultivation, is much inferior to the preceding.
It is a light filmy cotton, of weak, and very unequal
staple, having long and short fibres intermixed. It is used
chiefly for inferior goods. It derives its name of Bowed
Georgia from an instrument like a bow, which the planters
use in cleaning it.

Tennisse—much like Bowed Georgia, but in general
cleaner, and sometimes better staple.

New Orleans—this also resembles Bowed Georgia, but
it is generally preferred both to that and Tennisse. The
fibre of these three kinds is weak, compared with that of
West India, or Sea Island, and goods manufactured from
it, are unable to endure the same hardship.

South American Cotton.

Pernambuca—fine, long staple; clean and pretty uni-
form in quality; much esteemed; principally used by the
hoisters.

Maranham—rather inferior to Pernambuca; not so even
in quality, nor so clean; much like good Demara, and
used for the same purposes.

Bahia—much like Maranham; sometimes it has the ad-
vantage.

Rio—a very inferior cotton; very brown; much shell
in it; used generally for the same purposes as low West India.

Surinam—has a long staple; clean; yellow; it is a fine
cotton, and much used for making footlocks.

Cayenne—a fine good clean staple, preferable to Surinam.

Demara—a good quality; this cotton has fallen off
since the colony has been in possession of the English. The
belt has a fine silky strong staple, much esteemed. The in-
ferior sorts are rather brown, dirty, coarse, and much
mixed.

Berbicito—the quality of this has of late years fallen off.
The belt has a good staple, fine, silky, and clean; but
latterly it is brown, dirty, and mixed.

Carthage—a very long staple, but weak; it is very
stringy, and rather dirty.

Given—a brown coloured cotton, fine staple, and gen-

Cuman—a inferior to Giron, and not so clean.

Carrahee—inferior to Giron; still more dirty.

Laguna—inferior to Cuman, but preferable to Car-

West India Cotton.

Bahama—Cotton from the Bahama Islands is of various
qualities. The belt is grown from Bourbon feed, but is
much inferior to that kind. The staple is pretty good,
finer and silkiest, but it is often dirty. The inferior Bahamas
are very brown and dirty. The staple rather short but strong.

Barbarados—is of fair middle quality, the staple not very
long, but generally silkiest, and pretty strong; often a good
deal of the shell of the seed in it, which is a great objection.
Jamaica—very little cotton grown here, and that of
very inferior quality; there is the long staple, which is
very weak, and often very dirty, and the short, which is
also very poor and dirty.

St. Kitt's—very little grown; it is in general very brown,
dirty, but of fair staple.

St. Lucia—the same.

St. Thomas—the same.

St. Domingo—sometimes very clean good cotton, and
likewise very inferior; not much comes here.

Carriacou—rather a coarse grain, but in general clean,
fair, strong staple, used by the hoisters to mix with fine cot-
thon, such as Pernambuca.

Grenada—a good deal like Carriacou, but not always so

St. Vincent's—rather high-coloured, clean, good staple,
but not very fine; a good deal cultivated for the size of the
island.

Antigua—very little grown, much like St. Kitt's.

Torillo, Montserrat, Dominica—the same.

Martinique—very little comes here. It is a fair middle
quality.

Guadaloupe—much the same, sometimes very good

Trinidad—rather short staple, and in general very dirty.

East India Cotton.

Bourbon—the most even and uniform in quality of any
other. It is a fine silky staple, and very clean. It is the
most valuable cotton brought hither, except the best Sea
Island.

Surat—has a fine, but exceedingly short fibre, in general
dirty, containing leaf and sand. It is the lowest priced
cotton in the market, and used in the manufacture of low
coarse goods.

Bengal—much like Surat, but still shorter staple, in
general cleaner, and much about the same value.

Madras—not much brought hither. It is mostly from
Bourbon feed, and sometimes not unlike in staple, but in
general dirty, and contains much shell, which renders it lefs
valuable; worth little more than Surat; some very good
will fetch the price of West India.

Turkey.

Smyrna, &c.—a short mossy kind, and rather dirty, used
for making candlewicks; has more substance than Bowed
Georgia.

The preceding observations are intended to give general
ideas of the comparative value and qualities of the different
kinds enumerated, rather than precise and accurate descrip-
tions, which, from various causes, such as unfavourable
seasons,
seasons, exhausted soil, defective management and culture, cannot, as may readily be supposed, constantly and invariably apply.

In estimating their commercial value, we may place them in the following order, which compared with the gradation of M. Quatremere Dijonval's stylem, presents a curious contrast.

Sea Island Georgia, Bourbon—Pernambuco—Cayenne, Bahia, Maranham, Surinam—Demarara, Berbice—Bahama, Grenada, Caricou, Barbadoes and West Indies—Giron, and West Spanish, New Orleans, Smyrna—Jamaica, St. Kitt's, &c. &c., and inferior West Indies—Bowed Georgia, Carthageana, Carraccas, and inferior Spanish—Madras, Bengal, Surat.

The relative value of the cotton in the first half of this series, is tolerably permanent, and is here pretty accurately expressed. The varieties in the other half vary considerably. It is deduced from the average prices of the different kinds, during a period of several months.

It must be observed, however, that the low value of East India cotton from Surat, Bengal, and Madras, arises chiefly from the excessive shortness of its fibre, which, though fine and silky, units it for the manufacture of a fine thread by our mode of spinning, though we are assured the natives of Hindoostan employ it in the manufacture of their finest muffins.

The importation of cotton into Great Britain has progressively and rapidly increased during the last twenty-five years, as will appear from the following statements, from which some idea may be formed of the alluring and unprecedented increase and prosperity of our cotton manufactures during that period.

**Importation of Cotton into Great Britain.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Imports in lbs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1787</td>
<td>22,600,000</td>
</tr>
<tr>
<td>1785</td>
<td>17,992,888</td>
</tr>
<tr>
<td>1784</td>
<td>11,280,328</td>
</tr>
<tr>
<td>1783</td>
<td>9,546,179</td>
</tr>
<tr>
<td>1782</td>
<td>11,206,810</td>
</tr>
<tr>
<td>1781</td>
<td>5,101,920</td>
</tr>
</tbody>
</table>

From 1786 to 1790

<table>
<thead>
<tr>
<th>Year</th>
<th>Imports in lbs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1790</td>
<td>23,443,670 per a.</td>
</tr>
<tr>
<td>1802</td>
<td>66,850,395</td>
</tr>
<tr>
<td>1803</td>
<td>46,000,000</td>
</tr>
<tr>
<td>1799</td>
<td>40,000,000</td>
</tr>
<tr>
<td>1798</td>
<td>11,000,000</td>
</tr>
</tbody>
</table>

* This year's importation is not given from official documents, and is not therefore to be relied on as strictly accurate.

London and Liverpool are the great marts for cotton, the chief part of which was for a long time imported into London, but the situation of Liverpool, in the very heart of the cotton manufactures of the north, has rendered it the principal market in the kingdom, and great part of the cotton belonging to the merchants of London is now configned there.

The following is the number of bags, of about 300 lbs. each, imported into London and Liverpool in four different years, from which may be derived a tolerably accurate idea of the relative quantities of different kinds of cotton brought into this kingdom, and of the increased cultivation of some particular forts.

**Importation of Cotton into London.**

<table>
<thead>
<tr>
<th>Year</th>
<th>1786</th>
<th>1799</th>
<th>1805</th>
<th>1806</th>
</tr>
</thead>
<tbody>
<tr>
<td>America</td>
<td>100,148</td>
<td>100,142</td>
<td>64</td>
<td>13,236</td>
</tr>
<tr>
<td>Lisbon</td>
<td>36,739</td>
<td>33,646</td>
<td>1958</td>
<td>1647</td>
</tr>
<tr>
<td>Oporto</td>
<td>2155</td>
<td>5784</td>
<td>9495</td>
<td>10981</td>
</tr>
<tr>
<td>Demara</td>
<td>1288</td>
<td>175</td>
<td>9072</td>
<td>6139</td>
</tr>
<tr>
<td>Berbice</td>
<td>7139</td>
<td>5495</td>
<td>7995</td>
<td>1980</td>
</tr>
<tr>
<td>Barbadoes</td>
<td>1634</td>
<td>1980</td>
<td>1634</td>
<td>1980</td>
</tr>
<tr>
<td>Bahama</td>
<td>775</td>
<td>1491</td>
<td>775</td>
<td>1491</td>
</tr>
<tr>
<td>Dominica</td>
<td>1170</td>
<td>1743</td>
<td>1170</td>
<td>1743</td>
</tr>
<tr>
<td>St. Thomas</td>
<td>83</td>
<td>278</td>
<td>83</td>
<td>278</td>
</tr>
<tr>
<td>Antigua</td>
<td>1221</td>
<td>1325</td>
<td>1221</td>
<td>1325</td>
</tr>
<tr>
<td>Tortola</td>
<td>1288</td>
<td>1356</td>
<td>1288</td>
<td>1356</td>
</tr>
<tr>
<td>St. Lucia</td>
<td>260</td>
<td>224</td>
<td>260</td>
<td>224</td>
</tr>
<tr>
<td>St. Kitt's</td>
<td>200</td>
<td>186</td>
<td>200</td>
<td>186</td>
</tr>
<tr>
<td>St. Vincent's</td>
<td>287</td>
<td>287</td>
<td>287</td>
<td>287</td>
</tr>
<tr>
<td>Nevis</td>
<td>175</td>
<td>175</td>
<td>175</td>
<td>175</td>
</tr>
<tr>
<td>Trinidad</td>
<td>24</td>
<td>10</td>
<td>24</td>
<td>10</td>
</tr>
<tr>
<td>Cuba</td>
<td>2483</td>
<td>4011</td>
<td>2483</td>
<td>4011</td>
</tr>
<tr>
<td>Jamaica</td>
<td>450</td>
<td>546</td>
<td>450</td>
<td>546</td>
</tr>
<tr>
<td>Bourbon</td>
<td>588</td>
<td>588</td>
<td>588</td>
<td>588</td>
</tr>
<tr>
<td>Spain</td>
<td>608</td>
<td>608</td>
<td>608</td>
<td>608</td>
</tr>
<tr>
<td>Ireland</td>
<td>450</td>
<td>546</td>
<td>450</td>
<td>546</td>
</tr>
<tr>
<td>Tobago</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Teneriffe</td>
<td>306</td>
<td>306</td>
<td>306</td>
<td>306</td>
</tr>
<tr>
<td>Holland</td>
<td>1950</td>
<td>1950</td>
<td>1950</td>
<td>1950</td>
</tr>
<tr>
<td>Turkey</td>
<td>2242</td>
<td>2242</td>
<td>2242</td>
<td>2242</td>
</tr>
</tbody>
</table>

From
COTTON.

From these statements it appears, that in 1791, sixty four bags of cotton only were brought into the port of Liverpool from North America, 25,814 into London and Liverpool in 1799, and in 1806, upwards of one hundred thousand bags into Liverpool alone; nearly half the quantity imported into the whole kingdom of every description whenever.

The cultivation of cotton is become an object of principal concern, and is rapidly increasing in the southern states of North America. The produce of some parts of Georgia, as we have before observed, is of very superior quality; and there is every reason to believe, that in a few years, it will rival in quantity, as well as quality, the finest cotton of Brazil and Guiana.

It may not, perhaps, be irrelevant to our subject, to remark here, that the colonisation of Georgia formed the subject of a memorial presented to the Duke of Newcastle, then secretary of state in the reign of George I., by Colonel John Purry, a native of Switzerland. In this memorial, which was afterwards published, he sets out with this preface, that "there is a certain latitude on our globe, so happily tempered between the extremes of heat and cold, as to be more peculiarly adapted than any other for certain rich productions of the earth," amongst which he enumerates flax, cotton, indigo, &c.; and he fixes on the latitude of 33, whether north or south, as the identical one for that peculiar character. He settled some years afterwards, with a colony of his countrymen, on the river Savannah, which part Carolina from Georgia, where he perpetuated his name by founding the town of Purryburg; and proved, in some degree, the truth of his fable, by the introduction of those objects of cultivation, which have since become staple articles of the country.

The first importation of cotton from the East Indies took place in the year 1798. This cotton is not imported by the India company, but by the privileged merchants; and the first cargo brought by the East India Company, and valued at 20,000 l., cleared the enormous sum of 50,000 l. The cotton at that time sold at 2s. 2d. per pound, the following year it fell to 10l., and is now the lowest priced cotton in the market.

The following is the amount of importations since that time.

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1798</td>
<td>4637 bales of about 350 lbs.</td>
</tr>
<tr>
<td>1799</td>
<td>19714</td>
</tr>
<tr>
<td>1800</td>
<td>19820</td>
</tr>
<tr>
<td>1801</td>
<td>12111</td>
</tr>
<tr>
<td>1802</td>
<td>8900</td>
</tr>
<tr>
<td>1803</td>
<td>10476</td>
</tr>
<tr>
<td>1804</td>
<td>3546</td>
</tr>
<tr>
<td>1805</td>
<td>1842</td>
</tr>
<tr>
<td>1806</td>
<td>8422</td>
</tr>
</tbody>
</table>

All cotton whatever is subject to a duty of 12d. per pound, and also of 1½ per cent. on that amount. Calculated at the prices of that article in 1803. The amount of the duty on each particular kind is as follows:

- Sea Island Georgia: 4 per cent. ad valorem
- Fine Brazil: 8
- British West India: 6½
- Foreign West India: 10
- Inferior Brazil: 12
- Turkey: 12
- Bowed Georgia: 12½
- Spanish Cotton: 15 to 23½

Cotton, as a vegetable substance, approaches in its nature nearly to the ligneous matter, or woody fibre, and affords, by destructive distillation, the same products, and nearly in the same proportions as the hard and heavy woods. It is distinguished by its great affinity for earths and metallic oxides, but more especially for alumina and iron, on which is founded the theory and practice of calico-printing.

It is little alterable, insoluble in water, and the chief part of the weaker reagents. Nitric acid converts it into various vegetable acids. Vitriolic acid acts upon it as on ligneous fibre, both are decomposed, charcoal developed, and fulphurous acid given out. It is also distinguished by the beauty and permanency of the white which it acquires by alternate exposure to the action of alkalies and atmospheric air, or oxygenated mercuric acid.

The structure of the fibres of cotton has not been well ascertained. Lewenhoek, by microscopical examination, found them to have two sharp sides, and it seems to be owing to this circumstance, and to their poising some affinities like the filaments of wool, that cotton greatly irritates and inflames wounds and ulcers, if applied to them instead of lint.

COTTON, in Ancient Geography, a town of Asia Minor. Cotton-grass, in Botany. See ERIOPHORUM.

COTTON MANUFACTURE, in Commerce, one of the leading and most important branches of our national industry and commerce.

The history of its progress during the last century, affords a splendid instance of the fecund application of industry and talent to a branch of manufacture, unparalleled in the annals of commerce.

Scarce fifty years have elapsed since it was amongst the humblest of our domestic arts, and was confined chiefly to the fire side and cottage of the labouring poor of Lancashire. Its products were few, and mostly for home consumption, though some articles from Manchester were exported above a century ago. Its proceesses were simple, and the contrivances for accelerating labour, such as had been handed down for ages past with little alteration. The population engaged in this manufacture about the year 1750, is supposed not to have exceeded 20,000, and was little more than doubled in the succeeding twenty years.

From this state of comparative insignificance, it burst forth at once with a vigour and activity which has no parallel, and from causes which we shall flatter hereafter, became in the short period of thirty years, one of the most flourishing and important branches of our national industry.

For our internal consumption, it affords a variety of fabrics, suited not only to the ordinary wants and comforts, but also to the elegancies of life; and for exportation, such now is our superiority, that there is scarcely a civilized nation on the earth, that is not indebted to us for some article of this manufacture, and well authenticated accounts have been published of their having been found as articles of drefs amongst the distant tribes of Tartars.

In the following article we shall endeavour to trace the progress of this manufacture from its origin down to the present time, and the caufes which have contributed to powerfully to raise it in a few years to a state of importance, little short of that which the great flable manufacture of this country, that of wool, has acquired during the five last centuries.

The period of its first introduction into this country is not clearly ascertained, and there are few authentic documents of earlier date than the middle of the seventeenth century,
century, before which time, it is probable that the manufacture of cotton was too inconsiderable to deserve much notice.

The first historical notice we meet with is in the Itinerary of Leland, who visited Lancashire in the reign of Henry VIII. “Bolton-upon-Moore market,” says he, “fondth molt by cotton, divers villages in the moors about Bolton do make cottons.” From this an inference has been drawn in favour of the existence of the manufacture of cotton in Lancashire at this early period, a supposition which is however completely overturned by an act passed the 5th and 6th of Edward VI. 1552; entitled “for the true making of woollen cloth,” in which it is ordered “that all the cottons called Manchester, Lancashire, and Cheffhire cottons, full wrought to the tale, shall be in length twenty-two yards, and contain in breadth three quarters of a yard in the water, and shall weigh thirty pounds in the piece at least. Also that all other cloths called Manchester rugs, otherwise named Manchefter frizes, full wrought for sale, shall contain in length 36 yards, and in breadth three quarters of a yard, coming out of the water, and shall not be stretched on the teater, or otherwize, above a nail of yard in breadth, and being so fully wrought and well dried, shall weigh every piece 48 lbs. at the leaft.” However paradoxical it may appear, it is nevertheless clear from this passage of the act, that the Manchefter cottons of that day were a species of woollen cloth, and that of the coarfeft and strongest kind, as is sufficiently proved by the weight required by the statute. The testimony of Camden also to this point is decisive: when speaking of Manchefter in 1599, he says, “this town excels the towns immediately around it in handifmenfes, populousloufes, woollen manufactures, market place, church and college, but did much more excel them in the laft age, as well by the glory of its woollen cloths, which they call Manchefter cottons, as by the privilege of fanciaiy, which the authority of parliament under Henry VIII. transferred to Cheffhire.”

The manufacture of these cottons was known also in Wales, as appears from the 8th of Elizabeth, 1566; in which we have the following historical fact. “In the town of Shrewsbury there hath been, time out of mind of man, and yet is, a company, fraternity, or guild, of the art and mystery of drapers, which said fraternity hath by reason of a certain trade and occupation, of buying and felling of Welsh cloth and linen, commonly called Welsh cottons, frizes and plains, which they have had and used amongst them, been able not only to live thereby, but also have, at their common coll, provided houses and other necessaries for poor people within the faid town of Shrewsbury.” The distinction of the Welsh cottons here into frizes and plains, is another proof of their being made of wool.

It is certainly singular, that the term cotton should be applied to goods manufactured wholly of wool, and which from their weight and substance could not possibly be intended as imitations of, or substitutes for, the cotton goods of any other country.

The fact is however sufficiently evident from the preceding quotations, and still further from the consideration that at the present day the Kendal cottons, a manufacture which has subsisted now near five centuries, are made entirely of wool, and that of the coarsest kind.

Like the Welsh cottons they are manufactured both frized and plain; and are used chiefly for negro cloathing in America and the West Indies, though some are worn at home by the poor or labouring husbandmen. Various conjectures have been offered respecting the origin of the name, but the most probable is, that it is a corruption of the word coating. However this may be, it is very certain that the Manchester, Cheffhire, and Welsh cottons, which in all probability were derived from those of Kendal, were made entirely of wool, and that it is to these goods the observation of Leland applies in the quotation we have before given.

To whatever purpose cotton was applied, it is certain that long before we have any mention of the manufacture the raw material was imported into this kingdom. The earliest record we have met with, in a hasty and not very extensive search, is preferved by the accurate and indefatigable Hakluyt in the first volume of his Collection of Voyages, and is contained in a little work entitled the “Proces of English Policy.” The intent of the whole poem (for such it is) is to inculcate the absolute necessity to our commerce and existence as a free state, of England keeping the dominion of the seas; but it is chiefly valuable for the lift which it contains of the different natural productions, as well as manufactures, which were at that time the objects of commercial intercourse between the European states. After enumerating the various articles which constitute the trade of Spain, Flanders, Portugal, Britain, Scotland, Ireland, Prufia, Germany, Venice, Florence, Brabant, Holland, &c., he tells us, that “Genou refers to England in her huge ships, named Carracks, bringing many commodities, as cloth of gold, flilk, paper, much wool, oil, cotton, roach aluin, and gold coin; and they bring back from us wool and woollen cloth made with our own wool.” It is evident from the preceding quotation, that at least as early as 1430, about which time this little work was first printed, and probably also much earlier, this country was supplied by the Genoese with cotton from the Levant. The Genoese possessed this trade till the year 1511, when, according to Hakluyt, from that time to 1534, “divers toll ships of London and Bristol had an usual trade to Sicily, Catalonia, and Chios, and sometimes to Cyprus, and to Tripoli, and Baruch in Syria.” They exported thither fundry sorts of woollen cloths, calf-skins, &c., and imported from thence filks, camlets, rubarb, malanife, nucacel, and other wines, oils, cotton-wool, Turkey carpets, galls, and India spices. The Levant trade was soon after engrossed by the merchants of Antwerp, and till 1675 entirely abandoned by the English. Wheeler, who wrote in 1601, says, that “a little before the troubles in the Low Countries, the Antwerprians were become the greatest dealers to Italy, in English and other foreign merchandise, and also to Alexandria, Cyprus, and Tripoli in Syria, beating the Italians, English, and Germans entirely out of the trade, as they also soon did the Germans at the fairs and marts of their own country.” Accordingly we find from the same author, that cotton was one of the many articles with which they supplied this country at that period, which they brought chiefly from Sicily and the Levant, and sometimes from Lisbon, along with many other precious articles which the Portuguese derived at that time from India. After the sacking of Antwerp the English trade to the Levant revived, and in 1621 was in a flourishing state, as appears from the testimony of Mr. Munn, in his treatise on the trade of India, in which cotton is enumerated as one of the many articles brought by our merchants from the Mediterranean.

From these quotations it is evident, that previous to the discovery of America and the West Indies, and for some time afterwards, this country, and probably all Europe, was supplied with cotton from the Levant.

How far, from this early importation of the raw material, we have a right to infer the existence of a cotton manufacture in this kingdom, may perhaps admit of some dispute.
yet it is certainly very probable that, acquainted as we must have been in some degree with the cotton cloths of the East, and other countries, and furnished with the material for their fabrication, some attempts would be made to imitate them. Our first use of cotton, no doubt, at the early periods, was for candles, wicks; and to whatever purpose else it was applied, the manufacture had made no great progress in this country till the beginning of the seventeenth century, nor does it appear that on the continent, from whence, till within the few years, almost all our manufactures of cloth have been derived, the manufacture of cotton had made any progress before the middle of the sixteenth century.

Fustians were first made in Flanders, if we may credit Guicciardini, in his history of the Netherlands, who however assigns no date to their first introduction. In the little work we have before alluded to, anno 1420, preferred in "Hakluyt's Collection of Voyages," they are mentioned not only as an article of export from Flanders to Spain, but of import also from the Eulerings, Prussia, and Germany. We are disposed to believe they were first manufactured in Italy, where, from its proximity to the countries affording cotton, as well as its earlier communication with those nations which supplied Europe with cotton cloths, it was more likely to originate, than in the more remote and northern states of the continent; and we learn also from Guicciardini, in another part of his work, that in 1550, Antwerp annually imported from Milan "great quantities of gold and silver thread, various wrought filks, gold ruffs, fustians and dimityes of many fine sorts, scarlets, camaies, and other fine and curious draperies."

That the manufacture of fustian came originally to this country from the Netherlands is highly probable, and it is said to have been established in the towns of Bolton and Manchester by Protestant refugees. Fustians were manufactured there in the beginning of the seventeenth century, and it is probable this introduction was not much earlier. Had the Flemish carried this manufacture to any great extent, it would have found its way to this country much earlier. From the valt number of weavers and manufacturers of every description that emigrated to England, from the time of Edw. III. down to the troubles in the Low Countries during the reign of Philip II. of Spain.

In one of the sumptuary laws of James I., passed in the parliament of Scotland in 1621, it is enacted, "that servants shall have no silk on their cloaths, except buttons and garters, and shall wear only cloth, fustians, and canvas of Scotch manufacture." This prohibition would seem to imply a very advanced state of the manufacture of these articles in Scotland.

The first authentic document concerning the cotton manufacture of this kingdom, is contained in Lewis Roberts "Treasure of Traffic," published in the year 1641, and is as follows. "The town of Manchester lays the linen yarn of the Irish in great quantity, and weaving it, returns the same again in linen into Ireland to fall. Neither does her industry sink here, for they buy cotton wool in London that comes from Cyprus and Smyrna, and work the same into fustians, vermilions, and dimityes, which they return to London, where they are sold, and from thence, not Eldon, are lost into each foreign part where the said materials may be more easily had for that manufacture."

The manufacture of linen cloth, properly so called, never we believe, contributed any great part of the trade of Manchester, but the fustians, and indeed all the cotton goods of that board, were made of linen warp, composed of Hamburgh or Irish yarn, but chiefly of the latter, and these probably formed great part of the linen goods which Mr. Roberts says were returned to Ireland.

After this period, fustians were manufactured in quantities at Bolton, Leigh, and the places adjacent; but Bolton was the principal market for them where they were bought in the grey by the Manchester dealers, who finished and sold them in the country. The Manchester traders, especially on market days, to buy fustians of the weavers, each weaver then procuring his own yarn and cotton as he could, which subjected the trade to great inconvenience. To remedy this, the chapmen themselves furnished warps and cotton to the weavers, and employed persons in all the little villages and places adjacent, to deliver out materials, and receive back the manufactured goods when finished. Each weaver's cottage formed at that time a separate and independent little factory, in which the raw material was prepared, carded, and spun, by the female part of the family, and supplied wool, or worst, for the goods which were woven by the father and his sons.

The kinds of fustian then made were herring-bone, pillows for pockets and outside wear, strong cotton ribs and banna, broad-ribbed linen thickets and tafts, with whitened diaper, fringed dimities and jeans. These were succeeded by cotton thickets, goods figured in the loom, draw boys, and at later periods by cotton vellets, quiltings, counterpanes, carded dimities, velvets, velvetens, and strong and fancy cords. It is scarcely possible to convey any adequate idea of the varieties of cotton goods that have flowed from the loom, since the first dawn of this manufacture to the present time. The pattern cords of Manchester goods sent out to the continent by the leading houses engaged in the foreign trade, have presented specimens of near two thousand different kinds, varying in strength and materials, from the coarse and heavy fabrics to the finest and most delicate muslins, and in colour from the richest clints to plain and self-coloured grounds: some figured in the loom, some checked and others plain, yet all, or the greatest part of them, composed entirely of cotton.

For the introduction or improvement of many of these branches, this country is indebted to the late Mr. Wilton of Admirworth, near Manchester, originally a manufacturer of fustian. He early engaged in the manufacture of cotton which, by unwearied efforts, he brought to the utmost degree of perfection, and confiderably improved the mode of dressing, finishing, and more particularly of dyeing, which at that time was very imperfect. His goods, especially his velvets, were finished in a style that acquired a high character, both at home, and in the foreign market, and were readily distinguished from those of any other manufacturer. He cleared off the loose and uneven fibres with razors, and burnt or singed them with spirits of wine. This mode was succeeded by the use of hot irons, in form somewhat resembling the weavers' drying iron, but rounder, which were first employed by Mr. Wilton; and at a later period by cylinders of cast iron heated to redness, over which the goods were evenly and rapidly drawn, and thus freed from that superfluous down, or pile, which they had acquired in the loom, or in the various operations of washing, bleaching, or dyeing.

Towards the middle of the last century, or soon afterwards, the manufactures above enumerated, or such of them as were then known, had become of great importance to the towns of Manchester and Bolton, affording various articles for home consumption, as well as for an increasing foreign trade, and giving employment to great part of the population of the surrounding country. They had arrived at that state at which a pause must naturally have ensued, and beyond
beyond which they must have advanced with the flow and gradual increase of population; which, aided by every advantage, as well as by emigration from other districts, could never have kept pace with the demand, without the introduction of those improvements to which this country owes the prosperity and unrivalled state of its cotton manufactures, and of which we shall now proceed to give some account.

The mode of spinning in this country at that period was by the hand; on the well-known domestic machine called a single-thread wheel. A single spindle put in motion by a wheel and hand turned by the right hand, while the thread was managed by the left, composed the whole of this simple apparatus, on which one person could with difficulty produce a pound of thread, by close and diligent application, the whole day. The goods then manufactured were strong and coarse, compared with those of the present day, and little or no thread finer than from 16 to 20 hanks in the pound, each hank measuring 840 yards, was then spun. It was subject, as may readily be conceived, to great inequalities, its evenness depending greatly on the delicacy of touch, which the spinner by long habit had acquired, and varied with every little difference in the extension of the thread during twirling, and the revolution of the spindle in portions of the same length. As the demand for cotton goods increased, various contrivances were thought of for expediting this part of the manufacture. A patent was obtained by a person named Paul, and some others of London, for an engine for a more easy and expeditious mode of spinning cotton, and several other attempts were made at subsequent periods, but all with equal want of success, till the invention of the Jenney, by James Hargreaves, in the year 1767. Hargreaves was a weaver at Stanhill, near Church, a few miles distant from Blackburn, in Lancashire. He was a plain, industrious, but illiterate man, and possessed little mechanical skill or talent. He refided near the print ground, the first and infant establishment of the late Robert Peel, esq. from whose hints and conversation he derived much important assistance, and whose strong and active mind was at that time engaged in the promotion of every useful improvement connected with that branch of manufacture, in which he was afterwards so extensively concerned. An anecdote is still recorded in the neighbourhood, which affords to the parent of so many useful discoveries, the first improvement of the Jenney. A number of young workers, who were one day assembled at play in Hargreaves' house, during the hour generally allotted to dinner, and the wheel at which he or some of his family were spinning, was by accident overturned. The thread still remained in the hand of the spinner, and as the arms and periphery of the wheel were prevented from the framing of any contact with the floor, the velocity it had acquired still gave motion to the spindle, which continued to revolve as before. Hargreaves surveyed this with mingled curiosity and attention. He expected his surprise in exclamations which are full remembered, and continued again and again to turn round the wheel: it lay on the floor, with an interlent which was at that time sufficient for mere indolence. He had before attempted to spin with two or three spindles affixed to the ordinary wheel, holding the several threads between the fingers of his left hand, but the horizontal position of the spindles rendered this attempt ineffectual; it is not therefore improbable, that he derived from the circumstance above-mentioned the first idea of that machine which paved the way for subsequent improvement. It consisted at first of only 8 spindles, turned by hands from an horizontal wheel, in the centre of which was fixed a vertical shaft, with a handle at the top for the spinner. The threads passed between two horizontal pieces of wood, the breadth of the machine, which, when pressed together, clapped flat the roving like the finger and thumb of the spinner, and were thus extended or drawn out. He had great difficulty in putting up the thread, or winding it on the spindle after twirling, which he at last accomplished by means of a thread connected with a wire, and worked by the foot of the spinner. The Jenney in its original form was a rude machine. The first was made almost wholly with a pocket knife; and the clasp, by which the thread was drawn out, was the flake of a briar splint in two. It was, as may readily be conceived, defective in the construction of those parts essential to the performance of its work, and which an ordinary mechanic would have had no difficulty in contriving; but Hargreaves was obliged to work in secrecy, and polishing little mechanical skill, to avail himself of such assistance as he could procure, without making public the object he had in view.

Popular prejudice was soon excited against him, and the threats of his neighbours obliged him to conceal his machine for some time after it supplied the woof or web for his own looms. It was, however, generally known that he had made a spinning machine, and his wife, or one of his family, having imprudently boasted of having spun a pound of cotton during a short absence from the sick bed of a neighbouring friend, the minds of the ignorant and misguided multitude became excited, and they shortly after broke into his house, destroyed his machine, and also part of his furniture. Hargreaves soon after removed to Nottingham, whether he was invited by the stocking weavers of that place, and where he afflicted in the erection and management of a mill, about the time that Mr. Arkwright first settled there, after being in the same manner driven out, or rather deterred from settling in Lancashire, by the clamour and prejudice of the people. Hargreaves was little qualified, either by education or address, for the sphere of life into which he was removed, and after having afflicted various persons in the construction of machinery, and communicated to each by turns the whole of what he knew, he died in poverty, ill required by his employers, and little known to the country, which has since reaped such important benefits from his discovery. Before he quitted Lancashire, he had made one or two wheels of 12 or 16 spindles each for some of his relations or friends, and as the popular clamour abated, the number of these increased, till a second model spread over the whole country and delivered every machine, they could meet with. The value of this improvement however was so strongly felt, and the measures adopted against the ring leaders of this outrage so vigorous and decisive, that new wheels were immediately constructed, and it was remarked that many of those concerned in opposing their first introduction, were amongst the foremost to avail themselves of the advantages they now promised. Various alterations were made in the original machine, which from its form was inconvenient and tiresome to grow up persons, though girls of twelve or fourteen managed it with ease. The vertical wheel was substituted for the horizontal one, which rendered it much easier to work, and the treadle, which required an awkward and constrained posture, was rendered unnecessary by a simple contrivance managed by the hand. They were enlarged in their dimensions from twelve to twenty, and afterwards to thirty, fifty, and even eighty spindles, and their use rapidly extended over all the counties, though their first introduction everywhere where met with the most determined opposition. Even at Nottingham, if our information be correct, a serious affray took place on the first erection of the new machines, in which Hargreaves himself was severely wounded, and a young woman, who had accompanied him from Lan-
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cashire, and had been accustomed to the management of his first Jenny, nearly lost her life.

To Hargreaves also is ascribed an improvement in the mode of carding, which, before his time, had been performed with hand cards, on the knee, a tedious and laborious operation. These were succeeded by flock cards, in which the lower card was fixed immovable on a floor or flock, which left both hands at liberty to manage the upper one. These were first used in the woollen manufacture, and introduced into Hargreaves’ neighbourhood from Rochdale. His improvement consisted in applying two or three cards to the same flock, and suspending the upper cards, which from their weight and size would otherwise have been unmanageable, from the ceiling of the room by a cord passed over a pulley, to the other end of which was affixed a weight or counterpoise. With these, one woman could perform twice as much work, and with greater ease than she could do before in the common way.

The flock cards were succeeded soon after by cylinder cards, the invention of which is claimed by so many different persons, that it is impossible now to determine to whom the merit is due. Amongst the first who employed them, was the late Mr. Peel, who constructed a carding engine with cylinders at Blackburn, as early as the year 1762, in which he was assisted by Hargreaves.

Mr. Peel’s engine consisted of two or three cylinders, covered with cards, but had no contrivance for stripping, or taking off the carded cotton. This was performed by two women with hand cards, who alternately applied them to the left, or chimney cylinder, and thus took off the carding by turns. This was, in all probability, the first carding machine that was made; but Mr. Peel’s other inventions not permitting him to pursue the subject at that time, it was laid aside, and some years elapsed before it was improved and perfected by other hands.

Notwithstanding the severe punishment of the ring leaders of the late Luddite outrages, and the friendly means adopted to convince the labouring class of the folly and injustice of opposing these improvements, by which not only the country, but themselves, would in the end be materially benefited, considerable alarm and uneasiness were again excited, and though no fear of work had been experienced, a belief universally prevailed, that all manual labour would soon be annihilated by the use of these new machines. A third and more numerous mob therefore assembled in the year 1779, by which all the machinery turned by water or horses, both for carding and spinning, and all the Jennies above a certain size, that could be found within eight or ten miles of Blackburn, were completely destroyed. Jennies of twenty spindles, or under, were alone respected, every machine turned by water was demolished, and the large Jennies were either cut into two small ones that came within the size required, or if the owner chose, into one of twenty spindles, by faying off the extra number which was often confined to the flames. These and similar disturbances in different parts of the country impeded for an instant, but could not arrest the progress of this manufacture.

Mr. Peel, whose machinery at Altham was totally destroyed and thrown into the river, and whose personal safety was oftentimes in danger from the fury of a licentious and ungovernable mob, retired in disgust from the country, and established a cotton mill at Burton in Staffordshire, on the banks of the Trent, where he continued to reside many years afterwards.

Soon after the invention of the Jenny in 1767, Sir Richard, at that time Mr. Arkwright, brought forward his improvement in spinning, on which he had been long and laboriously engaged. This distinguished character, whose perseverance and invention raised him from one of the most humble occupations in society to affluence and honour, was the youngest of thirteen children, and was born in the year 1732, at Preston, in Lancashire. In this neighbourhood was then carried on a considerable manufacture of linen goods, and linen and cotton mixed, the various operations of which he had an opportunity of becoming intimately acquainted with, and being a man of uncommon natural powers, he directed his thoughts to the improvement of the mode of spinning, which had probably been conducted for ages by the same process. The first hint for effecting this improvement, he accidentally received from seeing a red-hot iron bar elongated, by being passed through iron rollers. Between this operation and that of elongating a thread, as now practiced in spinning, there is no mechanical analogy; yet this hint being pursued, has produced an invention, which, in its consequences, has been a source of national and individual wealth unparalleled in the annals of the world.

The difficulties which Mr. Arkwright experienced before he could bring his machine into use, even after its construction was sufficiently perfect to demonstrate its value, would perhaps for ever have retarded its completion, if his genius and application had been less ardent.

His circumstances were by far too unfavourable to enable him to commence business on his own account, and few were willing to risk the loss of capital on a new establishment.

Having at length, however, had the good fortune to secure the co-operation of some persons who saw the merit of the invention, and were willing to assist his endeavours, he obtained his first patent for spinning by means of rollers in the year 1769, and to avoid the inconvenience of establishing a manufacture of this kind in the heart of the cotton manufacture, such as it then existed, he removed to Nottingham. Here, in conjunction with his partners, he erected his first mill, which was worked by horses, but this mode of procedure was found to be too expensive, and another mill on a larger scale was erected at Cromford in Derbyshire in the year 1771, the machinery of which was put in motion by water.

This patent right was contested about the year 1772, on the ground that he was not the original inventor. He obtained a verdict however, and enjoyed the patent without further interruption to the end of the term for which it was granted.

As the essential part of Mr. Arkwright’s machine was entirely new, and was applied with the happiest success in various other forms for preparing the raw material for spinning, of which we shall speak hereafter, we shall pause a while in the historical detail of these inventions, and explain the general principles of its construction, and the mode in which its operation was performed. Previous to the year 1767, as we have already observed, all the spinning was performed on the domestic one-thread wheel, of which there were two kinds. The first, which we have before described, required the raw material to be previously prepared and carded, and was used for wool and cotton. The cardings were soft and loose rolls of the thickness of a candle, and from eight to twelve inches long, poffessing little strength or tenacity, the slightest force being sufficient to break or pull them asunder. One end of this roll being held between the finger and thumb of the spinner, and the other twisted round the point of the spindle, was rapidly drawn out during its revolution, and formed a coarse soft thread called a roving. For coarse woollen goods, this operation was sufficient.
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icient, and the thread was ready for the loom, but for fine cloth, and more especially for cotton, this operation of drawing and doubling was repeated, and the roving was converted into a smaller, finer, and longer thread. To this full operation, the term spinning was more particularly applied, the first being considered as preparatory, and was generally denominated roving. For some time after the introduction of the Jenny, this mode of roving on the single spindle continued in use, the joining of the short rolls or cardings, rendering manual dexterity absolutely necessary.

The second mode of spinning was on the flax wheel, and used for those substances, whole fibres from their nature, but more particularly from their length, would not admit of the preparatory process of carding. Their fibres were dried and disposed in an even and parallel direction, by an operation resembling combing, and were then coiled round the head of the distaff, affixed to a wheel furnished with a spindle, bobbin, and fly. The fly and spindle moved together, and were kept in rapid motion by a wheel and band, worked by the foot of the spinner. The bobbin which received the thread, ran loose upon the spindle, and moved only by the friction of its ends, in proportion as the fibres of the flax were disengaged from the distaff, by the finger and thumb of the spinner, and were twisted by the fly. If we suppose the machine itself to be left at liberty, and turned without the assistance of the spinner, the twisted thread being drawn inwards by the bobbin, would naturally gather more of the material, and form an irregular thread, thicker and thicker, till at length the difficulty of drawing out so large a portion of the material as had acquired the twist, would become greater than that of snapping the thread, which would accordingly break. It is the business of the spinner to prevent this, by holding the material between the finger and thumb, and by separating the hand during the act of pinching, that the threads may be drawn out to the requisite degree of fineness previous to the twist.

To accomplish these ends by machinery, the object of Mr. Arkwright's invention, two conditions became indispensably necessary. 1st. That the raw material should be so prepared as to require none of that intellectual skill, which is capable of separating the knotty or entangled parts as they offer themselves. And 2dly. That it should be regularly drawn out by certain parts resembling the finger and thumb of the spinner. The first of these was completely fulfilled by the various machines and contrivances for the preparation of cotton for spinning, which sir Richard afterwards invented and obtained a patent for; the second was accomplished in his first and capital machine, since called the 'Twill,' or Water Frame.

The contrivance for drawing out the thread constituted the great merit of the invention, the fly, bobbin, and spindle connected with it, being derived with little alteration from the flax wheel before described. It consisted of a pair of cylinders, slowly revolving in contact with each other, at a little distance from a second pair revolving with greater velocity, the lower cylinder of each set being furrowed, or fluted, in the direction of its length, and the upper ones neatly covered with leather to enable them to hold the thread. If we suppose the end of a roving, or loosely twilled thread, to be passed through the first pair only, it may readily be imagined that it will be gradually drawn off the bobbin, and pass through the cylinders without suffering any other sensible change in its form or texture, than a slight compression from the weight of the incumbent cylinder. But if from the first pair it be suffered to pass immediately to the second, whose surfaces revolve much quicker, it is evident that the quicker rotation of the second pair, will draw out the cotton, rendering it thinner and longer, when it comes to be delivered at the other side. This is precisely the operation which the spinner performs with his finger and thumb, and the application of this simple and beautiful contrivance to the spindle and fly of the common flax wheel produced that machine for which Mr. Arkwright's first patent was obtained, and which laid the foundation of all his subsequent discoveries.

Soon after the erection of his mill at Cromford, Mr. Arkwright made many improvements in the mode of preparing the cotton for spinning, and invented a variety of ingenious machines for effecting this purpose in the most correct and expeditious manner; for all of which he obtained a patent in the year 1775. The validity of this second patent was tried in the court of King's Bench, in the year 1781, and a verdict was given against him on the ground of the insufficiency of the specification, but on the 17th of February 1783, in the court of Common Pleas, before lord Loughborough, the question was again tried, and he obtained a verdict, having established by evidence the sufficiency of the specification.

This verdict, in consequence of great numbers having engaged in the erection of machines during the interval of four years that had elapsed since the former decision, occasioned considerable alarm, and raised up a host of enemies, from whom a premium on each spindle was demanded, under the threat of immediate suit. An association was formed of the manufacturers principally concerned in the business, and another cause instituted by writ of scire facias, was tried before judge Buller in the court of King's Bench, on the 15th of June 1783, in which, after a very long trial, he was called on the ground of his not being the original inventor. Conscientious that this was not the case, he moved in the court of King's Bench, on the 16th of November 1783, for a new trial; stating that, not being aware of the nature of the evidence to be brought forward on this trial for the first time after so many years had elapsed, he was then unp repared, but was now able to substantiate by proofs the validity of great part of the evidence which went to that point. The rule however was refused, and on the 14th November 1783, the court of King's Bench gave judgment to cancel the letters patent.

The inventions claimed by Mr. Arkwright, which gave rise to these reiterated contills with the rival manufacturers of Lancashire, related chiefly to the operation of carding, which was now brought to great perfection. Before we enter however into any account of these improvements, it will be necessary to take a shott view of the nature of this operation, and the mode in which it was performed at the date of Mr. Arkwright's second patent.

The card is a kind of machine made with wires instead of hair, stuck through a sheet of leather; the wires not being perpendicular to the plane, but all inclined one way in a certain angle.

From this description, such as are totally unacquainted with the subject, may conceive that cotton, being stuck upon one of these cards or brushes, may be scraped with another card in such a direction, that the inclination of the wires may tend to throw the cotton inwards, rather than suffer it to come out. The consequence of the repeated strokes of the empty card against the full one, must be a distribution of the cotton more evenly on the surface, and if one card be then drawn in the opposite direction across the other, it will, by virtue of the inclination of its wires, take
take the whole of the cotton out of that card, whose inclination is the contrary way.

In this mode, the operation of carding was formerly performed by hand with sheaves of card made upon thin boards, which were drawn and scraped against each other, and the cotton or wool was evenly diffused over the surface, and freed from all the knotty or entangled parts. One of the cards being then turned and applied in an inclined position, so as to scrape with one edge over the surface of the other card, in the direction of its teeth, the cotton was, by a particular manufacture, flipporg off and coiled up into these short soft rolls which we have spoken of already under the name of cardings. Such, in all probability, was the process employed with little alteration, during the five last centuries in the woollen manufacture of this kingdom, and applied at subsequent periods to the preparation of cotton. The use of cards was most likely derived from the Netherlands, at or before the time our woollen manufactures were improved by the emigration of Flemish weavers to this country, during the reign of Edward III.

They continued to be imported till the year 1653, when the tradesmen and manufacturers of London, and other parts of England, having made heavy complaints to Parliament of the obstruction to their own employment by the introduction of various foreign manufactured wares, an act was passed in the third year of Edward IV., prohibiting wool cards, and various other articles of iron, flax, copper, &c. from being imported into this kingdom.

The hand-cards were succeeded by flock-cards, and these again by cylinder cards, as we have already observed, which were first attempted about the year 1763.

This machine consisted of two or more large cylinders covered with cards, revolving in opposite directions, and nearly in contact with each other, and surmounted by other smaller cylinders covered in like manner, by whole revolutions in various directions, and with different velocities, the cotton was carded and delivered to the last or finishing cylinder, from which it was stripped off by different contrivances. The cards were nailed on in flares, or flots of six or eight inches broad, and the margin of each sheet in which the nails were driven being deliberate of teeth, formed so many intervals or furrows across the surface of the cylinder.

The cotton was stripped off first by hand, as in Mr. Peel's machine, and afterwards by a fluted cylinder, or by a roller armed with slips of tin-plate or iron, flanging erect like the teeth of an under-shot wheel, and which revolving quicker than the card, and in close contact with it, scraped off the cotton in distinct portions from each flite or flot, which fell into a receptacle below. This was a harf and rude operation, and rubbed and injured not only the carding, but the cards themselves. Mr. Arkwright substituted for the fluted cylinder a plate of metal nearl) toothed at the edge, and moved in a perpendicular direction rapidly up and down by a crank.

The flight, but reiterated strokes of this comb, acting on the teeth of the cards, detached the cotton in a fine and uniform fleece. On the finishing cylinder also, narrow fillet-cards, as they are termed, wound round in a spiral form, were substituted for the ordinary cards nailed acrost.

The continuity of the fleece was thus preferred, which was destroyed before by the intervals or furrows we have alluded to, and being gradually contracted in its size, by passing through a kind of funnel, and flattened or compressed between two rollers, was delivered into a tin can in one command, uniform, perpetual carding, so long as the machine continued in motion, and was supplied with the raw material.

This is, without exception, one of the most skilful and beautiful operations in the whole process of spinning. Mr. Arkwright's right to the invention of the crank and comb was the disputed point at the last hearing of this cause, and the evidence which he was unprepared to meet having procured to the satisfaction of the jury, the prior claim of a mechanic, named Heyes, his exclusive right, not only to this improvement, but to all others included in the same patent, was cancelled by the judgment of the court. How far Mr. Arkwright would have been able in the event of another hearing to have disproved the evidence thus unexpectedly brought forward, is not easy to determine. That the crank had been applied in some way or other, prior to the date of Mr. Arkwright's patent, though in a much less efficacious and approved manner, we believe will admit of the fullest proof, and this circumstance, in a case in which the interest of a great body of manufacturers was deeply concerned, and was opposed only by that of a single individual, would, in all probability, have confirmed the former decision in a court already weary of the discussion.

The improvement, as far as Mr. Arkwright was concerned, was original, and undoubtedly his own, and bears evident marks of that genius and happy invention which so strongly characterize every part of his machinery. He was anticipated in a single idea before it was matured and brought forth, and in this invention loft the fruits of his industry and talents. His claim to the spiral cards, which produce the endless, or perpetual carding, has however never been disputed. At the same time Mr. Arkwright brought forward other machines peculiarly adapted to the preparation of the materials for his own mode of spinning, and founded on the principle of his former invention. The first of these, in the series of successive operations, is the drawing frame.

This machine consists of a system of rollers similar to those before described in the twine frame, revolving with different velocities, either from the variation of size in the pairs of rollers, their performing a different number of revolutions in the same space of time, or from both these causes united. Three or more cardings coiled up in deep tin cans are applied at once to these rollers; in their passage through which, they not only eliminate so as to form one single drawing, but are also drawn out or extended in length. This process is several times repeated; three, four, or more drawings, as they are now termed, being united and passed between the rollers, the number introduced being so varied, that the last drawing may be of a size proportioned to the fineness of the thread into which it is intended to be spun. By this operation, the fibres of the cotton are drawn out longitudinally, and disposed in an uniform and parallel direction, and all inequalities of thicknesses are done away by the frequent doubling or joining of so many different lengths.

A third machine was contrived by Mr. Arkwright for giving the necessary degree of twist to these prepared lengths of cotton. In the flite in which it comes from the drawing frame, it has little strength or tenacity, and is received into similar deep cans, from whence it was passed through the rollers. To enable it to support the operation of winding, it is again passed through a system of rollers similar to those in the last machine, and received in a round conical can revolving with considerable swiftness. This gives the drawing a flight twisting, and converts it into a soft and loose thread, now called a roving, which is wound by the hand upon a hobbie, by the smaller children of the mill, and then carried to the spinning or twine frame, of which we have already spoken.
COTTON.

Such are the inventions and improvements for which we are indebted to the genius of Mr. Arkwright, and which complete a series of machinery, so various and complicated, yet so admirably combined and well adapted to produce the intended effect in its most perfect form, as to excite the admiration of every person capable of appreciating the difficulty of such an undertaking. And that all this should have been accomplished by the single efforts of a man without education, without mechanical knowledge, or even mechanical experience, is most extraordinary, and affords a striking instance of the wonderful powers displayed by the human mind, when its powers are steadily directed to one object.

Yet this was not the only employment of this eminent man, for at the same time that he was inventing and improving the machinery, he was also engaged in other undertakings, which any person, judging from general experience, must have pronounced incompatible with such pursuits. He was taking measures to secure to himself a fair proportion of the fruits of his industry and ingenuity; he was extending the business on a large scale; he was introducing into every department of the manufacture a system of industry, order, and cleanliness, till then unknown in any manufactory where great numbers were employed together, but which he effectually accomplished, that his example may be regarded as the origin of almost all similar improvements.

When it is considered, that during this entire period he was afflicted with a grievous disorder (a violent asthmatic), which was always extremely oppressive, and threatened sometimes to immediately terminate his existence, his great exertions must excite astonishment. For some time previous to his death, he was rendered incapable of continuing his usual pursuits, by a complication of diseases, which at length deprived him of life, at the Rock House, Cromford, on the 3d of August 1752, in the 66th year of his age.

The honour of knighthood was conferred on him in December 1786, on the occasion of presenting an address to his majesty.

In the infancy of the invention, sir R. Arkwright expressed ideas of its importance, which to perfons less acquainted with its merits appeared ridiculous, but he lived long enough to see all his conceptions more than realized in the advantages derived from it, both to himself and his country; and the rate to which those manufactures dependant on it have been advanced since his death, makes all that had been previously effected appear comparatively trifling.

The system of spinning introduced by sir Richard was found most particularly applicable to the production of thread for warp, whilst the Jenny of Hargreaves was chiefly employed in spinning the woof, or welt, for the coarse kinds of which it was better adapted, indeed, than the more perfect machine of sir Richard.

On these machines were spun for some years after their introduction all the twill and woof in the kingdom; the use of the Jenny has, however, since been almost wholly superseded by a third machine, called a Mule, for the invention of which we are indebted to the ingenuity of Mr. Samuel Crompton of Bolton.

The mule was invented about the year 1775, during the term of sir Richard's patent right, and did not on that account come into general use till after its expiration. It is a compound of the two machines of Arkwright and Hargreaves, and is considered, as its name imports, as the offspring of the twill frame and Jenny. It consists of a system of rollers like those of the twill frame, through which the roving is drawn and received upon spindles, revolving like those of the Jenny, and from which it acquires the twist. The carriage on which the spindles are disposed is moveable, and receding from the rollers forms, what quicker than the thread is delivered, draws or extends it in the same manner as is done by the Jenny. See Mule.

This complements the series of machines now in use, and is the only important discovery in spinning since the invention of sir Richard Arkwright, on which indeed its chief merit is founded.

Of its excellence, and also of those other machines employed in the different preparatory processes, some idea may perhaps be formed, when it is stated that a pound of fine cotton has been spun on the mule into 350 hanks, each hank measuring 840 yards, and forming together a thread 157 miles in length.

Hitherto we have entered only into such details of the different processes of spinning as were necessary to elucidate the history of their invention, and exhibit both the sources and progress of the various improvements.

The operations to which cotton undergoes in its passage from the raw material to the flake of thread, are various and multiplied in proportion to the fineness required, and the different uses to which it is designed.

If we analyze these operations, they resolve themselves into the following: Battling, carding, doubling, drawing, and twirling. The three latter are never performed singly, but are variously joined in the same machine; and the same elementary processes are oftentimes repeated in different machines, with various and different effects.

With reference to these effects, the operations which cotton undergoes, may be denominated battling, carding, drawing, and doubling, roving, and spinning.

Battling, is that operation which prepares the cotton for carding, by opening and detangling the hand compressed masses, in which it comes from the bales.

It is performed by beating the cotton with sticks on a square frame, across which are stretched small cords about the thickness of a goose quill, with intervals sufficient to suffer the feed, leaves, and other adventitious matter to fall through.

When a hard matted or compressed mass of cotton is smartly struck with a stick, the natural elasticity and reility of its fibres, gradually loosen and detangle them, and the cotton recovers by repeated strokes all its original volume. During this operation the feeds, &c. which adhere, are carefully picked out by the hand, and the cotton rendered as clean as possible.

Battling is generally and best performed by hand, though the facility of hands and skill of lid our have rendered other contrivances necessary. For a description of the battling machine, with other particulars relative to this operation, see Machine.

Carding, is that operation in which the first rudiments of the thread are formed. It is performed, as we have before stated, by cylinders covered with wire cards, revolving with considerable twistness in opposite directions, nearly in contact with each other, or under a kind of dome or covering, the under surface of which is covered with similar cards, whose teeth are inclined in a direction opposite to those of the cylinder.

By this means the separation of almost every individual fibre is effected, every little knotty or entangled part disengaged, and the cotton spread lightly and evenly over the whole surface of the last or finishing cylinder, from which it is stripped by the contrivance we have already described.

For Jenny spinning, which is still in use for the coarser kinds
kinds of thread, the cardings are stripped off in separate length. The finning cylinder is covered with the ordinary cards nailed on in stripes across, and the cotton contained between the margins or intervals of each stripe, forms one carding, whose length of course depends on the width of the engine, or cylinder. When stripped off by the crank and comb, it forms a loose and shapely film, which falling on the surface of a plain wooden cylinder, the lower half of which revolves within a hollow shell or casing, the cotton in its passage is rolled up and delivered at the other side in perfect and cylindrical cardings.

For mule or water spinning, the finning cylinder is covered with spiral or fillet-cards, and the cotton being taken off in one continued fleece, and contracted by passing through the funnel and rollers, forms one endle of perfect carding, which is interrupted only, or broken, when the tin can that receives it is completely filled.

In the Jenney carding, the fibres of the cotton are disposed across or at right angles to the axis of the carding; in the perpetual carding they are disposed longitudinally, or in the direction of its length, and it is this circumstance which renders the carding definite for mule or water spinning, inapplicable to the Jenney, and vice versa. For further details, and a description of the carding engine, we must refer our readers to the article Engine.

Drawing, and Doubling, is one of the preparatory processes for which we are indebted wholly to Sir Richard Arkwright, and belongs exclusively to the mule, or water spinning.

The doubling, or passing three or four cardings at once through a cylinder of rollers, by which they are made to coalesce, is intended to correct any inequalities in the thickness of the cardings, and also to admit of their being frequently drawn out or extended by passing through the rollers. The effect of this frequent drawing is to disperse the fibres of the cotton longitudinally, and in the most perfect state of parallelism. The operation of carding affects this in a certain degree; yet the fibres, though parallel, are not straight but doubled, as may easily be supposed from the teats of the cards catching the fibres sometimes in the middle, which become hooked or tachelled upon them. Their disposition is also further disturbed by the taker-off or comb, which strips them from the finning cylinder, and though the general arrangement of the fibres of a carding is longitudinal, yet they are doubled, bent, and interlaced in such a way, as to render the operation we are now speaking of absolutely necessary.

When the cardings have been passed four or five times through the drawing frame, every fibre is stretched out at full length, and disposed in the most even and regular direction; and though the average length of a fibre of cotton is not two inches, yet the filleted drawing, as these prepared cardings are now termed, has all the appearance of a lock of Jerky wool, whole fibres, six or eight times as long as those of cotton, have been carefully and smoothly combed.

Roving, is that operation by which the prepared cotton, as it comes from the carding engine, or drawing frame, is twilled into a loose and thick thread, and wound upon a spindle or bobbin.

In Jenney spinning, the cardings are moved without any other preparation, by a machine called a roving billy, for a description of which, with other particulars relative to Jenney spinning, see JENNEY.

In mule or twist spinning, the prepared carding or drawing, as it is termed, is again passed through a system of rollers, and is twisted, either by a rapidly revolving can, into which it is delivered from the rollers, or by a fly and spindle similar to those of the flax wheel; in the latter case it is wound on the bobbin by the machine; in the former it is received in the conical can in which it acquires the twist, and is afterwards wound upon bobbins by the smaller children of the mill.

Sir Richard Arkwright always employed the revolving can, and it is still employed in many of the first mills in the country. The roving frame with fly and spindle, which is in fact nothing more than the twist frame of Sir Richard, is now however very generally in use, especially since later improvements have removed objections to the machine, which rendered its use heretofore inconvenient. See Frame.

The operations through which the thread passes after it has received the first twist are various, and depend greatly on the use it is intended for.

The finer it is required, the oftener it is drawn out and twisted, till by degrees, as in the process of wire-drawing, it is brought down to the fineness required. The rovings are therefore distinguished into first, second, and third, according to the number of operations they have gone through.

Spinning, is the last operation which the thread undergoes in the series of processes employed in converting it into thread, and is that in which it receives the final extension and twisting.

It is performed either on the Jenney, twist frame, or mule. Of these machines we have already spoken generally, and also of the nature of their operation; for further and more particular details, we must refer our readers to their proper heads.

Such are the operations by which the raw material is brought into the slate of thread, and such the improvements by which the cotton manufacture of this kingdom has arrived at its present unexampled state of prosperity. We cannot give our readers a better idea of the effects immediately resulting from these various improvements and discoveries, than by the following extracts from a pamphlet, published in the year 1788, intitled, "An Important Crisis in the Calico and Muslin Manufactures of this Country explained," the purport of which was to warn the nation of the bad consequences which would result from the rivalry of the East India cotton goods, which then began to be poured into the market in increased quantities, and at diminished prices.

The author affirms, that, not above 20 years before the time of his writing, the whole cotton trade of Great Britain did not return 200,000l. to the country for the raw material, combined with the labour of the people; and at that period, before the introduction of the twist frame and Jenney, the power of the single wheel could not exceed 50,000 spindles.

In 1787, the number of cotton mills, as near as intelligence could be procured, was as follows:

<table>
<thead>
<tr>
<th>County</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Lancashire</td>
<td>41</td>
</tr>
<tr>
<td>Derbyshire</td>
<td>22</td>
</tr>
<tr>
<td>Nottinghamshire</td>
<td>17</td>
</tr>
<tr>
<td>Yorkshire</td>
<td>11</td>
</tr>
<tr>
<td>Cheshire</td>
<td>8</td>
</tr>
<tr>
<td>Staffordshire</td>
<td>7</td>
</tr>
<tr>
<td>Westmorland</td>
<td>5</td>
</tr>
<tr>
<td>Berkshire</td>
<td>12</td>
</tr>
<tr>
<td>Reel of England</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>119</td>
</tr>
<tr>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>1</td>
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<td></td>
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<tr>
<td>The</td>
<td></td>
</tr>
</tbody>
</table>
The whole being 14,3, the cost of which was 
enuminated at £ 715,000.

There were at the same time 550 males, and 20,700 Jennies, containing, together with the water frames, 1,951,000 spindles; the cost of which, and of the auxiliary machinery, together with that of the buildings, is estimated to have been at least £ 285,000.

The total expenditure being £ 1,000,000.

These establishments, when in full employment, were estimated to produce as much cotton yarn as could be spun on the single spindle by a million of persons; and instead of diminishing the employment of the people as was apprehended, they called vast numbers from idleness to comfortable independence. At this time they were supposed to give employment to 26,000 men, 31,000 women, and 55,000 children in spinning alone; and in all the subsequent stages of the manufacture the number of persons employed, was estimated at 133,000 men, 59,000 women, and 48,000 children, making an aggregate of 159,000 men, 90,000 women, and 101,000 children, in all 350,000 persons employed in the different branches of the cotton manufacture.

The quantity of the raw material consumed in this manufacture, which in 1781 did not amount to 6,000,000 lbs., in the year 1787 exceeded 22,000,000. The astonishing rapidity of this increase, which will be more clearly shown by the following statement, is to be in a great measure attributed to the extension of the manufacture to the goods of India, particularly calicoes and muslins.

Cotton used in the Manufactures of Great Britain.

<table>
<thead>
<tr>
<th>Year</th>
<th>Pounds</th>
<th>Supposed value when Manufactured</th>
</tr>
</thead>
<tbody>
<tr>
<td>1781</td>
<td>5,101,920</td>
<td>£ 2,000,000.</td>
</tr>
<tr>
<td>1782</td>
<td>11,206,810</td>
<td>3,000,000.</td>
</tr>
<tr>
<td>1783</td>
<td>9,549,179</td>
<td>3,200,000.</td>
</tr>
<tr>
<td>1784</td>
<td>11,729,738</td>
<td>3,950,000.</td>
</tr>
<tr>
<td>1785</td>
<td>17,992,888</td>
<td>6,000,000.</td>
</tr>
<tr>
<td>1786</td>
<td>19,151,167</td>
<td>6,500,000.</td>
</tr>
<tr>
<td>1787</td>
<td>22,600,000</td>
<td>7,500,000.</td>
</tr>
</tbody>
</table>

The cotton imported for the manufacture of 1787, was of the following growth:

<table>
<thead>
<tr>
<th>From</th>
<th>Pounds</th>
<th>Estimated cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>British West India</td>
<td>6,500,000 lbs.</td>
<td>£ 6,000,000.</td>
</tr>
<tr>
<td>French and Spanish settlements</td>
<td>6,000,000</td>
<td>£ 6,000,000.</td>
</tr>
<tr>
<td>Dutch Settlements</td>
<td>1,700,000</td>
<td>£ 1,700,000.</td>
</tr>
<tr>
<td>Portuguese ditto</td>
<td>2,500,000</td>
<td>£ 2,500,000.</td>
</tr>
<tr>
<td>East India, procured from Osnabrug</td>
<td>1,000,000</td>
<td>£ 1,000,000.</td>
</tr>
<tr>
<td>Smyrna and Turkey</td>
<td>5,000,000</td>
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<tr>
<td>Smyrna and Turkey</td>
<td>5,000,000</td>
<td>£ 5,000,000.</td>
</tr>
</tbody>
</table>

The application of this cotton to the different branches of manufacture was supposed, by intelligent persons, to have been as follows:

<table>
<thead>
<tr>
<th>Branch</th>
<th>Pounds</th>
<th>Estimated cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candlewicks</td>
<td>1,500,000 lbs.</td>
<td>£ 1,500,000.</td>
</tr>
<tr>
<td>Hosiery</td>
<td>1,000,000</td>
<td>£ 1,000,000.</td>
</tr>
<tr>
<td>Silk and Linen mixtures</td>
<td>2,000,000</td>
<td>£ 2,000,000.</td>
</tr>
<tr>
<td>Fustians</td>
<td>6,000,000</td>
<td>£ 6,000,000.</td>
</tr>
<tr>
<td>Calicoes and Muslins</td>
<td>11,000,000</td>
<td>£ 11,000,000.</td>
</tr>
</tbody>
</table>

The manufacture of calicoes was begun at Blackburn, in Lancashire, about this period also, at first from yarn spun in the neighbourhood upon Jennies, but afterwards principally from cotton.
COTTON.

from the water twist. The goods manufactured here before the introduction of calicoes, were Blackburn grays, made of cotton wool, but linen warp of Hamburgh or Irish yarn, but chiefly of the latter. These goods, which were the calicoes of that day, were manufactured as early as the year 1715, at which period all the cotton goods, such as pillow, jeans, jennets, most of the cords and thicksets were made with linen warp, and even the warps for dimities were half linen. The Blackburn grays were sold in the unbleached state to the calico-printers of London, and afterwards to those of Lancashire and Cheshire, till the introduction of the real calico put a stop to this manufacture about the year 1775.

Blackburn has since become the great mart for calicoes, and the chief source from whence the printers of Lancashire, as well as those of London and Scotland, are supplied. The quantity manufactured, or rather sold there, (for the Blackburn house employs weavers in all parts of the surrounding country, and even at considerable distances) amounted to a year or two ago to upwards of one million pieces annually. The quantity now made is perhaps less than this, but fine goods, a larger capital is employed, and the manufacture is on the increase.

The quantity of calicoes manufactured in the whole kingdom, not twenty years ago, was little more than half what the Blackburn market now affords, and it is probable that this forms but a small part of the quantity annually made in this country. They are chiefly printed into garments, shawls, and furnitures, both for home consumption, and a considerable foreign trade. The finer sorts are worn as dresses, white or plain, and large quantities are used for linings, and other purposes for which the coarser kinds of linen were formerly employed.

The lightens, as well as cheapens, of the calicoes, has rendered it a chief article of dress among all classes of people, and annihilated the manufacture of many of the lighter kinds of woollen and worsted stuffs, formerly so much in demand. The trade of Halifax, and the surrounding country, which confided almost wholly in such stuffs, has gone entirely to decay, and been replaced by the manufacture of calicoes and other cotton goods: and such are the quantities now manufactured, more especially in the country around Colne, and thence to Bradford, that from 16 to 20,000 pieces are brought weekly to the Manchester market; the produce of those districts which adjoin, or are included between these two towns.

To the same improvements in spinning which gave birth to the manufacture of calicoes, we are indebted for that of muslin, a branch not less important to the country than honourable to our pride and industry as manufacturers. For this elegant article of dress all Europe had long been tributary to India, where the manufacture has, through the long lapse of ages, arrived at the greatest perfection. Muslins were first introduced into this country by the East India company, about the year 1670, before which time cambrics and Nilein lawns were worn, and such fine linens from Flanders and Germany, as were brought back in exchange for our woollen manufactures of various kinds exported thither in considerable quantities. The manufacture was attempted at Paisley as early as the year 1700. A few looms were employed, but this trade was soon annihilated by the introduction of the goods of India. Eighty years afterwards a more successful rivalry commenced. British muslins were first successfully introduced in the year 1781, but were carried to so great extent till 1785, since which period their progress has been rapid beyond all example. In the year 1787, it was computed, that not less than 500,000 pieces of muslin, including shawls and handkerchiefs, were annually made in Great Britain. The manufacture has, from that time to the present, continued progressively to increase and improve, and bids fair to become the most lucrative and extensive of any in this country. The rapidity with which it approaches to perfection, and its surprising extent in the short space of twenty years, are amongst the many important consequences that have resulted from the improvements in the art of spinning.

By the cheapness and superior quality of our yarn, we are enabled to employ thousands of looms in the production of this elegant and useful article of dress, to keep in this country millions of specie which was heretofore sent to the East to purchase this commodity, and to clothe ourselves with this fabric at one-third the expense formerly required.

The demand for, and the use of this article, are proportionate to its cheapness and elegance, and it is not difficult to see that it will become a staple manufacture of this country.

Glasgow and Paisley in Scotland, and Bolton in Lancashire, are the chief seats of this manufacture, which is however considerably extended over many other parts of the country. India still maintains its superiority in the finer kinds of muslin, some of which of most exquisite beauty and fine are sold in this country, as high as ten or twelve guineas per yard. In productions like these, no rivalship can exist; in India they are looked on as master pieces of art, and the time employed by an Indian weaver in their production would ruin an European.

The common kinds, or such as are more adapted to general use, are also preferred by our English ladies to those of home manufacture, on the score of their enduring greater hardships and retaining their colour, or rather whiteness, better. This excellence, which excels to a certain degree, is the result of the superiority in the manufacturing processes, but in the raw material, of which that of India is the finest and best in the world.

Muslins were manufactured at Zurich and St. Gall in Switzerland long before we succeeded, yet such were the advantages which the improvements in spinning afforded us, that till within these few years (during which the unsettled state of the continent has intercepted, and in some countries annihilated, all commercial intercourse) we supplied all Europe with muslins, not only of India, but British manufacture.

Nankeens and ginghams were manufactured, which, without the improvements of the spinner, could not possibly have succeeded.

These articles, like the two preceding, were formerly brought from the East exclusively. P thoughtful, dimities, jeans, quiltings, velvets, velurets, velveteens, and a variety of cotton goods, which the limits of our article will not allow us to particularize, have been improved to such a pitch, that Manchester has supplanted all Europe with these fabrics.

Cotton hosiery forms an inconsiderable part of this immense manufacture, and it was the demand for cotton thread for the flaxing weavers, that urged forward the improvements of Mr. Arkwright, and held out such strong inducements to those whose affluence first enabled him to give his invention to the world.

Exclusive of these various manufactures, great quantities of twist were exported to the continent, and a considerable part of the yarn spun in Manchester, before the late disastrous occurrences in Germany, was employed in the foreign loom. It was this demand for twist, which our continental rivals were unable to produce of equal quality or
COTTON.

or price with ours, which raised this branch of the cotton manufacture to a state of prosperity, of which some idea may be formed, when it is stated that the various establishments for spinning only in this country, when in full activity, give employment to nearly 150,000 persons, a number very little short of that which is employed in France in all the different branches of the cotton manufacture together, and which, according to the report of Chapital, late minister of the Interior, amounts to near 200,000.

The value of these improvements in spinning was so obvious and so important, that it is not surprising they were soon diffused over the Continent, notwithstanding every opposition was used to prevent it. By the emigration of mechanics, and the clandestine exportation of machinery contrived here, our neighbours soon became possessed of our improvements, and had we paused in our exertions, the superiority we had acquired would long ere this have passed away. France, as we have just observed, has a great population employed in the manufacture of cotton. Prussia and Germany have many and increasing establishments, and in the two former countries, and in the hereditary dominions of the emperor of Germany, our piece goods have been long prohibited.

Our spinners however, by their ingenuity, and the improvement and perfection of their machines, have still kept the lead; and the attention of our manufacturers is now directed to the perfection of those operations more immediately connected with the labours of the loom, in which, till within these few years, little has been done. Every day brings forth new discoveries, and it is not difficult to see that what has already been achieved, and what, from the general spirit of improvement which is now abroad, must inevitably follow, will soon place us far beyond the reach of competition in the manufacture of cotton goods, and give us advantage greater than ever we enjoyed since our first establishment in this country. Before we enter into such a detail of these improvements however, as will enable our readers fully to comprehend their nature and extent, it will be proper to take a short view of the different operations and processes through which the thread passes in its progress from the hands of the spinner to the loom.

The thread is of two kinds, viz. twist, so called from its being harder twisted than the other, forming a flouter thread, and used for the web or warp of piece goods, and soft, which is a looser, softer thread, and used for the woof. The twist is delivered to the weaver in small oblong rolls called cops; in the flate they are stripped off the spindles of the mule or Jenny. When these are used, a small pointed piece of wood or skiver is carefully passed through the axis of the cop into the place formerly occupied by the spindle, and one end of it being held between the teeth, the thread is wound off the cop upon the weaver’s bobbin by a wheel somewhat smaller in size, but the same in principle as the common one thread wheel on which all the spinning was formerly performed.

This is generally done by children, and the bobbins are then ready for the shuttle. Twist undergoes several operations before it is ready for the loom. It is delivered by the spinner either in bank, or cop.

Hank twist is that which is spun on the water frame, from the bobbins of which it is reeled into hanks of a determinate length, each measuring 840 yards. The value and fineness of the thread are proportionate to the number of hanks in a pound, and they are denominated by numbers, as Nos. 20, 30, 100, &c. which express the hanks which a pound of twist contains. In this rate it is generally fixed, an operation which is intended to give additional strength and tenacity to the thread, and enable it to support the different operations in its passage to the loom. It consists in impregnating the thread fully with thin size, chiefly formed of wheat flour boiled in water, with the addition of a little glue. The twist is carefully worked in this and afterwards raveled and dried. The thread acquires considerable strength by this operation, and the loose fibres are all firmly attached or glued to its surface. It is then delivered to the winder.

Winding is that operation by which the thread is transferred to the warping bobbin, either from the cop, hank, or twist frame bobbin.

Formerly this was chiefly done by females, and the work was carried home and performed by any of the family not engaged in domestic concerns, on a small wheel that turned two bobbins at a time.

This mode is still in use, but the work has been greatly abridged and facilitated by the use of machines of various contrivances, for a description of which, see Machine.

Cop twist is that which is spun on the mule or Jenny. It is reeled only occasionally to ascertain its value and fineness, and is delivered in cops to the winder.

The next operation is that of warping, or the formation of the web. The machine on which this is performed is an octagonal prism five or six feet high, and somewhat less in diameter, revolving vertically, and put in motion by a band and pulley placed under the feet of the warper. The bobbins which furnish the thread are suspended horizontally in a frame on one side. Twenty-eight or thirty threads, forming together a sleyden called a half beer, are wound round the prism in a spiral form from top to bottom. The machine is then turned the contrary way, and the thread wound round the prism upwards from bottom to top, and this is repeated backwards and forwards till a sufficient number of half beers have been wound to form a web of the breadth required.

When finished, and the ends properly secured, the whole is wound off and coiled upon the hand into a round ball called the Warp. For further particulars of this operation, and a description of the machine, see Mule.

If the thread has been previously fixed in the hank, it is now ready for the loom, but if the warp is made of cop twist, that operation is next performed.

The warps are boiled several hours in water till they are thoroughly penetrated and softened; after draining some time they are then uncoiled and worked in the size till fully impregnated, after which the superfusible size is squeezed out, and they are fastened on poles to dry; the warp is then ready for the loom.

Without this operation of fixing, which, as we have before observed, gives strength and tenacity to the thread, it would not support the friction of the loom. Two threads are passed between each dent of the reed, and at each stroke of the treadle one ascends whilst the other descends. There is therefore a constant friction of the threads upon each other, as well as against the teeth of the reed. The motion of the reed itself also backwards and forwards, and of the heads up and down, is very severe upon the warp, and unless it has been well penetrated by the size, and its fibres well cemented or glued together, this continual rubbing is sufficient to destroy its texture.

Good fixing prevents this, but it is still further aided by another operation called dressing, which is performed by the weaver himself after the warp is got into the loom. This consists first, in applying with a brush a kind of paste made of
of wheat flour well boiled, to which is often added a small portion of common salt; sometimes of potash, and sometimes even a little tallow.

It is in fact a repetition of the operation of fixing, with this difference, that the dressing is applied chiefly to the surface of the thread, which is slightly smeared with the paste, and brushed uniformly in one direction from the healds to the beam, by which means the loose fibres are all disposed evenly one way, and finally glued fast to the thread.

In summer the warp is dried simply by baking it, but in winter, and in damp cold weather, a hot iron is lightly patted over it. It is then dressed again with a brush dipped in tallow or butter, with which it is slightly greased. This gives fulness to the thread, and greatly diminishes the friction of the healds and reeds. As such a portion of the warp as is extended between the healds and beam can alone be dressed at one time, this is winched, and the threading repeated again upon another portion, and so on alternately dressing and weaving till the whole of the web is finished.

Various improvements on these different processes have taken place during the last six or eight years, which have made greater or less progress in proportion to their importance. We shall enumerate, therefore, not only these of recent date, but such as, though known some time, have not been generally adopted.

The weaver's bobbin is still wound by hand in the manner already described, though the use of a small machine, by which twenty bobbins or upwards are wound at once, is daily gaining ground. They are to be seen now in almost every weaver's cottage where several looms are employed. This labour is further abridged by a very ingenious contrivance for which a patent has been obtained. The cops, instead of being wound, are compressed or squeezed till they are small enough to enter the shuttle. The winding here is done away, and the cops thus compressed are preferred, by the weavers to the common bobbin. In those large establishments where the different processes, such as spinning and weaving, are carried on together, the cops are spun small enough to enter the shuttle without compression. The weft is transferred at once from the spindle of the mule to the weaver's shuttle, and the time and waste of winding, and even of compressing, saved entirely.

On the same principle also, a considerable reduction has been made in the labour of reeling and winding twist. Till within a late period, the practice has uniformly been to reel it into hanks from the bobbin it was spun on, to fife it in the hank, and then wind it for warping. An obvious reduction of this labour is to warp it directly from the bobbin it is spun on, and fife it in the warp like cop twill. For reasons, however, which it will not be necessary here to enter into, this has been found impracticable. It is, however, transferred to the warping bobbin without the intermediate labour and waste of reeling, and the fizing is done in the warp.

Considerable improvements in the mode of fixing have been made within these few years, especially in the fixing of warps.

Formerly, the practice was to work the warp in the warm fize by the hand, the heat of which was of course limited to that degree which could be readily borne by the workman. Experience having proved that the hotter the fize, the more evenly and perfectly was the warp penetrated, various contrivances were adopted for applying it at a high temperature. Amongst others are olding troughs furnished with few pairs of rollers, through which the warp passes, and is strongly compressed whilst immersed in the hot fize.

Mr. Marland's idea of placing the twill in an exhausted receiver, and admitting the hot fize, promises considerable advantages in some cases, and when the plan has been matured, will no doubt be susceptible of many applications.

But the greatest improvement that has been made in these different processes, and one that must eventually affect a complete revolution in the whole system, is Mr. Meffrs. Ratcliffe and Rof's mode of dressing. Hitherto this operation has been performed by the weaver in the manner we have already described, at the expense of one-third of his time and labour. As it is only possible for him to dress as much of the work as is contained between the healds and beam, he is fearlessly got settled to his work, after each operation, before he is again called off to dress another portion.

By this continual interruption of one species of labour by another totally different, it must be obvious to every one, that not only much time is lost, but that the labour itself cannot be equally well performed.

There is a delicacy and certainty of touch in weaving, dependant on long habit and experience, and on which the evenness and goodness of the cloth depends.

If the force with which the woof or weft is driven up by the reed, be not always alike, if it is greater at one time and less at another, the cloth will be thicker and thinner at those places, and such is the nicety on which this depends, that the most experienced weaver, after an interruption of some hours, cannot at once regain it.

Mr. Meffrs. Ratcliffe and Rof's dress the whole of the warp before it is wound upon the beam, the labour of the weaver is therefore uninterrupted, and his attention directed solely to one object. This alone is a great point gained, but it is attended also by other, not less important, advantages. Great part of the intellectual skill required in weaving is in the dressing and beaming of the warp; the mere mechanical part of throwing the shuttle, &c. is soon acquired, even by a boy. A more accurate division of labour, by reducing the beaming and dressing to a system by which they are better, more economically, and more expeditiously performed than before, has removed the great difficulty in the art of weaving, and rendered it in a great measure the employment of children.

From what we have already said, it will appear that the object in dressing and fixing is nearly the same, and Mr. Meffrs. Ratcliffe and Rof's, by this improved mode of dressing, have succeeded in reducing these operations to one. They have gone still further; they have done away the necessity of warping, by forming the web at once from the bobbin, and thus reduced the warping, fixing, dressing, and beaming, to one operation. A thousand bobbins and upwards supply the materials for the warp, which in its progress is properly disposed and arranged, fixed, dressed, and finally wound upon the beam. This improvement, which may justly be regarded as the most important that has taken place in weaving since the invention of the fly shuttle fifty years ago, must in the end effect a complete change in the system of labour. Great however as its advantages are, some time must necessarily elapse before it can be accommodated to general use.

In large establishments, where the different processes of the manufacture are carried on together, such as spinning, weaving, and the labour immediately connected with them, it has been adopted with the happiest success, but the weaving in this country is chiefly done in the cottages of the poor, and to their use the costly and bulky apparatus of Mr. Meffrs. Ratcliffe and Rof's is not adapted.

To derive all the advantages possible from this improvement, therefore, it will be necessary either that the weaving
COTTON.

be done in large shops, to each of which a dressing machine may be attached, or that the warps be delivered to the country weavers ready dressed and wound upon the beam. The former plan is daily gaining ground, and perhaps it is not difficult to foresee, that at no very distant period all the dressing of the country will share the fate of the spinning, and quit the cottage for those larger establishments in which it will be susceptible of better management, and more accurate division of labour.

The last improvement, which we shall notice in the manufacture of cotton, and which, when once established, will complete what Arkwright has so happily begun, is that of dressing by machinery. Various attempts have been made of late years to apply the great moving powers, steam, and water, to the common loom. Mr. Dolignon, many years ago, constructed a loom adapted, as we are told, to the manufacture of all kinds of cloth. It might be wrought by the power of wind, water, steam, or animal strength, and possessed an infinitive capacity (if we may be allowed the phrase) of knowing when any thread of the warp or warp was broken, in which case the loom ceased its motion, thus calling upon the attendant to repair the damage, which being done, it immediately went on as before; fixed of these looms might be attended with ease by a girl of sixteen, or an aged or infirm person of either sex. The inventor did not live to reap the fruit of his labour, nor to introduce his machine properly to the world. He died soon after its completion, when he had brought it to a stage of perfection satisfactory to himself, and with him perished the result of his industry and talent. Such is the account which the friends of Mr. Dolignon give of this invention: since that time several other looms of similar construction have been invented.

Mr. Arkwright of Glasgow has produced one, a model of which is deposited at the house of the Society of Arts in the Adelphi, in favour of which numerous testimonies were transmitted to the secretary. In the year 1796, a loom on this construction was set to work at Mr. Monteith's spinning works near Glasgow, which answered the purpose so well, that a building was erected by Mr. Monteith for containing thirty looms, and afterwards another to hold about 200.

The model deposited in the Adelphi is an improvement on those first made for Mr. Monteith, whose name we do not however feem among the hil of those who bore testimony to its value. A loom of this kind, says the inventor, occupies only the fame space as a common loom. The expense is about one-half more. The reeling, winding, warping, beaming, looming, combing, dressing, fanning, greasing, drawing bires, shifting heddles, rods, and temples, which is nearly one-half of the weaver's work, together with the general waffe accompanying them, all which occur in the operation of the common loom, do not happen in this, which by its single motion, without trouble, performs every operation after the spinning, till the making of the cloth is accomplished. One weaver and a boy are sufficient to manage five looms of coarse work, and three or four of fine work. The construction of this loom is so complicated, that the society have not, in their Transactions, given the public a drawing of it, conceiving that a model only could render it intelligible.

Other looms of a more simple, and consequently of more useful construction, have been invented by Medirs. Horrockes and Marland of Stockport near Manchester, which, combined with the dressing machine of Medirs. Ratchiffe and Rolls, promise to be of considerable utility, and have already been tried on a sufficiently extensive scale by the inventors. The dressing machine, indeed, has removed the great difficulties in machine weaving, and without it nothing important or advantageous could have been accomplished.

It has also rendered the machine loom itself of less importance, by simplifying the art of weaving so much as to render that the employment of boys, which was formerly entrusted only to experienced weavers. To the rapid extension of this improvement, however, there are objections at the present moment arising from moral as well as political considerations, which will greatly retard its progress, and we must look to happier times for the proof of its general utility, and its final adoption or rejection.

The preceding sketch, short and imperfect as it is, will serve to convey some idea of this immense and important manufacture. Of the population at present engaged in it, and of its annual value, we have only such conjectures to offer as are founded on those materials which are within the reach of individuals, and unless government order such an enquiry, it can only be estimated by the importation of cotton, which is for the most part manufactured at home.

Perhaps the manufactories of Scotland, as being in a narrow field, is more within the reach of observation than that of England; we therefore venture to lay before our readers, as being apparently an approximation to the truth, the following:

Estimate of the value of the cotton manufacture in Scotland, made up in the year 1796 at Glasgow, the centre of the principal commerce and manufacture of that kingdom.

39 water mills, which cost for machinery and buildings 10,000/, each. - £ 390,000

and work 124,800 spindles.

1200 Jennies 84 sp. each 100,800 at £1 each. 7,000

600 mules 144 sp. each 86,400 at 30/. each 18,000

Total, working by day and night = 312,000 spindles.

Building for the Jennies' cloth - - 75,000

Capital vested in machinery and buildings £ 490,000

The yarn annually spun is valued at £ 1,256,412

The cotton 4,629,043 lbs, average value 24 402,904

The people employed are estimated at 25,000 of both sexes, young and old, but the greater part under 15 years of age, whose labour, aided by machinery, thus improves the value of the raw material in the first stage of manufacture.

From which deduct wages estimated at 792,508

Remains for cloth, and wear and tear of machinery, and proprietors profits, the sum of 293,508

The annual value of calicoes and muslins, now deviously esteemed the staple of Scotland, when finished, including the excise duty on a part of them which are printed, and the cloth of tending and needle work on about a third part of them, was then estimated at £ 3,108,549

Value of the cotton yarn as above £ 1,256,412

Yarn got from England 520,000

£ 1,776,412

The
The wages of weavers, tambours, needle-workers, the chargers, the profits of the manufacturers, and the revenue paid to government, thus amounted to £1,332,137.

Which great sum is produced by capital, ingenuity, management, and labour in the subsequent stages of the business.

The cotton manufacture in Scotland employs 38,815 weavers, for winding warp and weft, and tappings of the muslin adorned with needle-work, besides those employed in the spinning branch 25,000 girls most children.

Hence it appears that 181,753 persons derive their immediate subsistence from the cotton manufacture in Scotland, and also a proportional number in England, employed in producing yarn to the value of 520,000/; besides the innumerable people of all classes concerned in providing necessaries and accommodations of every kind for that great multitude, and in constructing and repairing the machinery and buildings; and the cultivators of the cotton in the East and West Indies, farmers, merchants, &c. who are all wholly or partly supported by this most beneficial manufacture, by which the cotton is raised, taking the whole manufacture together, to about seven times the value it was of when imported.

The cotton manufacture has increased very much in Scotland since the year 1796. The imports of cotton into the kingdom in the year 1800, were nearly treble those of the year 1796. The printing business however appears to have declined a little, as may be inferred from the following

### Account of the Calicoes, Muffins, Linens, and Stuffs, printed in Scotland in the years 1796 and 1800.

<table>
<thead>
<tr>
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<th>1796</th>
<th>1800</th>
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<tbody>
<tr>
<td></td>
<td>Rate of Duty</td>
<td>Yards</td>
</tr>
<tr>
<td>Foreign Calicoes and Muffins</td>
<td>£</td>
<td>1,141,403</td>
</tr>
<tr>
<td>Britich Calicoes and Muffins</td>
<td>7</td>
<td>4,258,597</td>
</tr>
<tr>
<td>Linens and Stuffs</td>
<td>7</td>
<td>1,185,000</td>
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</tbody>
</table>

In England and Wales, on the contrary, the printing business has increased during the above period, as will appear from the following

### Account of the Calicoes, Muffins, Linens, and Stuffs, printed in England and Wales in the years 1796 and 1800.

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<th>1796</th>
<th>1800</th>
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<tbody>
<tr>
<td></td>
<td>Rate of Duty</td>
<td>Yards</td>
</tr>
<tr>
<td>Foreign Calicoes and Muffins</td>
<td>£</td>
<td>1,150,000</td>
</tr>
<tr>
<td>Britich Calicoes and Muffins</td>
<td>7</td>
<td>24,393,320</td>
</tr>
<tr>
<td>Linens and Stuffs</td>
<td>7</td>
<td>1,494,862</td>
</tr>
</tbody>
</table>

If we follow the calculation assumed in an estimate laid before a committee of the house of commons, that the duty is one tenth of the value, we may estimate the value of the British calicoes and muffins printed in England and Wales in 1796, at £3,552,972 0

And those in 1800 at 4,184,365 0

From these statements, which are official, it appears that in 1800 there were printed about a million and a half of calicoes and muffins in Great Britain, exclusive of linens, stuffs, and foreign calicoes. From that time, to the year 1806, the business has continued progressively to increase, the amount of duties on printed goods for that year being upwards of 600,000/., which will bring the number of pieces printed nearly to two millions.

The quantity of white calicoes and muffins made in England and Wales, is certainly much greater than that of the printed; probably not less than three million pieces annually.

From the signatures to the petition of the journeymen calico-printers to the house of commons in the year 1806, it would appear that, in Great Britain and Ireland, the number is 7500; we suspect however that this number includes apprentices, and that the list also has been swelled, as is usual in such cases, by unfair means.
COTTON PAPER. See Paper.

COTTON, Philosophia, a name given by some chemical writers to the flowers of zize, from their whiteness, and silky or cottony appearance.

COTTON Silk. See Bombax.

COTTON Thistle. See Onopordum.

COTTON Tree. See Gossypium.

COTTON-Weed. See Athanasia, and Gnaphaliwm.

COTTONARA, Le Canara, in Ancient Geography, an extensive country of the peninsula of India, on this side the Ganges. Pliny says, that pepper was exported from it in canoes to Bracca, a sea-port situated at the mouth of the river Bars. It produced an excellent pepper, called cot-tonarian. This maritime country was situated between the mountains and the sea, and was about four or five leagues in breadth.

COTTONIAN Library, consisting of curious manuscripts, &c. was founded by Sir Robert Cotton, who was forty years in collecting it; and at his death, in 1671, left the property of it to his family, though defined for public use. A large accession was made to this library by private benefactions before the death of the founder, and afterwards by the purchases of his heirs, and donations of others, who added to it a great number of books, chiefly relating to the history and antiquities of our own nation. An act of parliament was obtained, at the request of Sir John Cotton, in 1700, for preferring it after his decease, under the above denomination, for public use. It is now fixed in the British Museum. For catalogues relating to it, see 12 and 13 W. III. c. 5, and 5 Ann. cap. 39.

COTTONIANUS Codex, in Biblical History, a manuscript of part of the New Testament, containing the portions of the Acts of the Apostles, and of the Epistles appointed to be read throughout the whole year; and reposed in the Cottonian library. It is said to have been written in the 11th century. Calley collated it in 1735, and Wetstein has inserted his extracts. In the same library is another MS, containing only the following fragments: Matth. xxvi. 57-65. xxvii. 26-31. John, xiv. 2-10. xv. 15-22; and having in several places corrections. Wetstein collated it in 1715. This MS. is written on paper, though with uncial letters. Both Le Long and Wetstein call it "Charta Egyptiaca purpurei coloris."

COTTS, in Rural Economy, a wood often provincially employed to signify such tame lambs as have been brought up by the hand, in consequence of the mother having died. See Cade Lamb.

COTTUS, in Ichthyology, a genus of fishes in the thoracic order. The head is broader than the body, and spinous; the eyes placed vertically, and furnished with a milky membrane; the gill membrane, with six rays; body round, without scales, and tapering towards the tail; dorsal fins one, sometimes two. Linnaeus divides the Linnaean genus Cotrus into three distinct genera, the drift of which he retains under the Linnaean name, the two others are his Aplidophora, and Aplidophoroid.

This arrangement is approved by the later French writers, and by this means the cotus tribe is reduced to nine species. The cotus (cotte) of the French are distinguished by having the head larger, or more bulky than the body, and in general of a somewhat conic form; the dorsal fins two; the head, or gill-covers, armed either with spines or tubercles, and more than three rays in the thoracic fin.

Three species of the cotus genus are found in Britain, two of the marine kind, and the other an inhabitant of our fresh water streams; these are the cataphractus or pogge, the father-lather, C. scorpius; and the C. gobio, or river bull-head. One or two other kinds inhabit the European seas, and the rest are chiefly natives of India.

Species.


The head of this fish is large, bony, and rugged, the mouth placed beneath and hinged; the body covered with strong bony crulls, divided into several compartments, the ends of which project into a sharp point, forming an echinated appearance along the back and sides from the head to the tail; and the back and sides, which are of a brown colour, as well as the head, are usually marked with three or four large dulky spaces; the body beneath white. The armed bull-head grows to the length of four or five inches, or rarely exceeds six inches, and is found on the sea-coasts.

QUADRICOanus. Four bony protuberances in the middle of the head. Linnaeus. Four horned bull-head.

A figure of this species is given in the Muf. Adolph. Fret. pl. 32, and also in the work of Blach. Its general appearance bears a strong resemblance to the common father-lather of our own coasts, but differs specifically in having the four bony protuberances on the head as before mentioned, two of which are situated towards the middle of the head, and two behind. The prevailing colour is ochaceous, marbled with brown; beneath whithis; pectoral fins very large and rounded. It is found in the Baltic and Mediterranean sea, near the entrance of rivers, and sometimes wanders into the fresh waters. In the spring season it is taken in great plenty in the Dino in Livonia, and near Dalerow in Sweden. This fish grows to the length of ten or twelve inches, and is observed by the affluence of its pectoral fins, which are of very considerable size, to swim with great rapidity.


Inhabits the shores of Europe, Newfoundland, and Greenland, and rarely attains to a large size, being usually found about six or eight inches in length; those of twelve or fourteen inches long are very uncommon, except in the northern seas. It is a fierce and active fish, and will defend itself against the attack of sharks, and other large preda- cious creatures, which it annoys by means of its spines. The body is compressed, tapering towards the tail, and of a brown colour, variegated, dotted, and flecked with white. The flesh is eaten in Greenland, and also in various parts of Europe, but the vulgar have a superstitious idea that the head is poison, and therefore cut off that part before they dress it.


A species found in the East and West Indies. Niam-
haff law it in the East, and Maregrave in Brasil: it was first described by the last mentioned author, and it is supposed the fish he mentions under the name of *p. amic* is full a variety only of the same fish. In Brasil it is called *arui.*

The length of this fish is from six to eight inches; the colour brown, varied with white on the sides; the fins pale spotted with brown, and the whole surface marked with numerous pores, through which a mucous fluid exudes with which the fish is impregnated, and which renders the fish unwholesome, if not dangerous, as an article of food, notwithstanding the fish itself is of an agreeable flavour. The head is large; the eyes small; mouth very wide; tongue and palate smooth; lips long; teeth large, distinct, rounded, and placed in several rows; the gill-covers consist of a single piece, and are armed with three or four spines; the opening of the gills is very wide. It is called the grunting bull-head, because, when first taken, it makes a peculiar kind of noise, not much unlike the grunting of a pig, occasioned, as it is concluded, by the sudden expulsion of the air from the internal cavities through the gill-covers and mouth.

**Scaer, Head and lines down the body covered with serrated scales; lateral line acuteated. Linn. Rough bull-head.**

A native of the Indian seas. The head is oblong and flattish; the body rather compressed, blue on the back, with the red flivery, tinged with blue, and marked with fix or seven moderately broad and distant light bands. Its fins are blueish, spotted on the rays, and variegated on the membranes with brown. The species feeds on terebrate animals, and crabs. In the "System of Ichthyology," published by Bloch, it constitutes, with another analogous fish, a new and distinct genus under the name of *platycephalus;* this genus is distinguished by having the body very flat, and the ventral fins placed at a considerable distance from each other. The rough bull-head is the *cotte rabbareus* of French writers.

**Insidiator. Head with acute lines above, and two spines each side. Gmel. Forskal. Infidious bull-head.**

Larger than the common European bull-head, but in other respects much resembling it. The species was discovered by Forskal in the Red Sea, where it grows to the length of nearly two feet. It is of the litoral kind, frequenting the coasts, and concealing itself under the sand, from whence it springs on such of the smaller fishes as happen to approach its haunts. The body is depressed, and of a tapering form; the colour of the upper part grey, and of a redder form; the colour of the upper part grey, and of a redder form; the gill-covers armed with a crooked spine turning inwards. Gmel. Linn. Miller's thumb, or river bull-head. Donov. Brit. Fishes, &c.

This species inhabits clear waters in most parts of Europe. Its usual length is from six to seven inches. The general colour yellowish-white, darker, and more clouded on the back and head; the lower part white. This fish favours with great swiftness when in search of prey, and is like the rest of its tribe, esteemed of the voracious kind. The river bull-head often lays concealed either among the gravel, or under stones at the bottom of the water, where it finds abundant supply of food in the larve of aquatic insects, and the spawn or young fry of other fishes.

**Japonicus. Body octagonal, mailed with prickly bony scales; no cirri. Gmel. Pallas, Japanese bull-head.**

First described by professor Pallas, who informs us it is a native of the seas about the Kurile islands, and grows to the length of about a foot. The colour is yellowish-white with the back dusky or brownish, and rough beneath. Like the armed bull-head the body is protected by a bony rugged covering or crbfs disposed into eight prominent lines along the body. The head is elongated and compressed, the upper part rather flattened, and marked with a longitudinal channel. The snout is obtuse and divided into two lobes; the jaws armed with a great number of teeth of small size; the eyes are situated towards the end of the snout, and over each is a small protuberance; the gill-covers are dentilised, the fins marked with dusky streaks, and having the rays very rough.

**Madagascariensis. Head armed with numerous spines; dorsal fins united. Gmel. Linn. Marsilles bull-head.**

Nearly allied to the cottus scorpio. It is a native of the Mediterranean sea, and is said to occur about the coasts of Marsilles. The first twelve rays of the dorsal fin are spines, as are likewise the three anterior ones of the anal fin.

**Megalops. Scaly, with two curved spines on each side the head, and a longitudinal middle furrow between the eyes. Le Cotte Mânadoges, La Cepede. Madagascan bull-head.**

Described and figured in the third volume of Le Cepede's work from the manuscripts of Commeron, who discovered the species on the coast of Madagascar. It is said to be allied in some degree to the river bull-head, but is longer in proportion, and of superior size. The head is depressed, and the eyes are situated near each other on the upper part of the head; the pectoral fins of moderate size, and rounded form; the body covered with large scales. Le Cepede observes on the authority of Commeron's drawing, that the tail is divided by two indentations into three distinct rounded lobes, and hence this writer was almost induced to confute a new genus of this fish. It appears, however, very doubtful from the appearance of this drawing whether the tail is really divided or not; from it may be, with equal propriety, inferred by consulting the drawing that the artist intended only to represent two dusky marks or spots instead of indentations; and it must therefore remain with future observers to determine whether this rare and curious fish exhibits such a peculiar and very striking character. From its general aspect we can scarcely think it fairly entitled to a place in the cottus genus.

**Niger. Black or blackish, with a single spine each side the head; lower jaw longer. Body covered with large fins. Le Cotte mado, La Cepede. Black bull-head.**

This is also a native of the African seas, where it was found by Commeron, and is described in the work of La Cepede. In size and habit it resembles the black Goby. The second dorsal fin, as well as the ventral fin, is speckled and bordered with deep black; the anterior fin marked by two longitudinal blackish bands, and clouded with yellow. The head is thick, and largest at the posterior part, where it is armed on each side by a small spine, and appears somewhat swelled or inflated. The mouth is very wide; and both jaws are armed with a row of small, short, close-set teeth resembling those on the bones protuberances near its throat. The body is black or blackish, and is covered with very rough scales.

**Monopterygus. Head unarmed; dorsal fin single. Gmel. Single-finned bull-head.**

Found in the Indian seas about the coast of Tranquebar. The body is slender, and covered by an oval bony mail, which towards the tail becomes hexagonal. The eyes are situated near the top of the head; they are of a large size, the form oblong, colour slivery with the pupil black. The upper jaw is longer than the lower, and is furnished with
with two recurved spines; the gall-covers consist of a single plate. On the upper parts the colour of this fiddle is brown, becoming whitish on the sides, and marked with a few transverse reddish-brown bands and spots. The abdomen is white. In general, the fins are circular, and have the rays split; the pectoral fin is long and broad, and is, as well as the tail-fin, spotted with brown.

**Australia.** Whitish, with the head aculeated, and body marked with transverse vivid bands. Shaw. Gen. Zool.

Southern Coast of White Island. B.T. Bay.

Described by Dr. Shaw as a doubtful species in Mr. White's voyage to Botany Bay. The length is stated at about three inches and a half; the colour yellowish-white, tinged with brown on the upper parts, and variegated by three or four transverse blackish bands; the head armed with pretty numerous strong spines both in front and on the gill-covers; eyes large, and body covered with minute scales.

**Cotinus** is also a name given by some writers to the **Callionymus lutescens** of Gmelin, or dracunculus, yellow gurnard, or swimming dragonet of other writers; and also to the **Callionymus Dracunculus**, orord dracunet of Pennant.

**COTENTII,** in Ancient Geography, a people of Rhodes, according to Strabo.


Gen. Ch. Calyx common, either many-eaved, or divided into many segments. Cor. Florets in the disk numerous, hermaphrodite; tubular, four-leaf, unequal, in the circumference, females either forming a ray, or more frequently little conspicuous. Stam. Filaments in the hermaphrodites four; anthers united in a hollow cylinder, the length of the floret.


**With a ray.**


plant glaucous. Stems nearly erect, weak, three feet high or more, almost smooth, most frequently simple. Leaves alternate, serrate, oblong, ciliated, soft; segments obtuse, with a small point. Flowers rather large, terminal, solitary; calyx scales in two ranks, lanceolate, acute, equal, slightly ciliated. A native of the Cape of Good Hope.

Obi. Poutlera and Adanson separated the radicant species from the rest, under the generic name lancifolia, and have been followed by Gartner; though he acknowledges that this is the only difference, and that lancifolia is no other than cotula mastic (larvata) with a ray. He recommends it, however, to future observers to examine whether the seeds in the other species have a different form in the disk and the ray, as he has actually found them in turbinata. La Mark, in the Encyclopaedia, had retained all the species under cotula; but, in his subsequent illustrations, he has adopted the new genus lancifolia, and has figured three species. Wldide now has referred these plants to the lidbeckia of Bergius. But as the simple preference of ab-basis of a ray does not appear to us sufficient to constitute a generic distinction, we have continued the original arrangement of Lancifolia, only breaking the genus into two sections. Commerson and Jofic have made a new genus for C. turbinata, with the following character. Flowers radiate; florets of the disk four-cleft; of the ray about twenty, ligulate, very short. Calyx top-shaped, with an empty space under the receptacle, and a short eight-cleft border. Seeds compressed. Receptacle convex. But there is nothing in it now consistent with the generic character of cotula given above.

**Cotula alba:** Linn. See Eclipta alba.

**Cotula bicolor:** Wild. See Grangea bicolor.

**Cotula crotata minimia:** Tour. See Anacyclus crotata.

**Cotula cuneifolia:** Wild. See Grangea cuneifolia.

**Cotula grandis:** Linn. See Chrysanthemum pecten-avis.

**Cotula madraspatana:** Wild. See Artemisia madraspatana et grangea.

**Cotula minima:** Wild. See Artemisia minimia.

**Cotula non fatia:** J. Dauh. See Anthemis arvensis.

**Cotula spilanthus:** Linn. See Spilanthus urucu.

**Cotula serpens:** Linn. See Lariaria decumbens.

**COTURNICES, in Ornithology. See TETRACOS.

**COTURNIX, the Quail of English writers, and Caille of Buffon; a species of Tetraon, which fee.**

**COTUY, in Geography, a canton and town in the Spanish part of the island of St. Domingo, bounded E. by the bay of Sanaga. N. by the chain of mountains called Mont-Charlill, W. by the territory of la Vega, and S. by the chain of mountains, called Seivo. In the year 1527; gold mines were worked here. In the mountain of Meyram, whence issues a river of the same name, there is a copper-mine of rich, that when the copper is refined it will yield eight per cent. of gold. Here are also found excellent lapis lazuli, a flecked chalk, preferred by some painters to bone, chalcedony, emerald, and iron of the best quality. The soil is excellent, and the plantains are highly commended. The people cultivate tobacco, but are chiefly employed in herding swine. The town is heated by a league from the S.W. bank of the Yuna, which becomes navigable near this place, about 13 leagues from its mouth in the bay of Sanaga. It contains about 156 lettered houses, in the middle of a little Savannah, and surrounded with woods; 50 kagues N.E. of St. Domingo, and 15 S.E. of St. Yago. N. lat. 15° 11'. W. long. 70° 2'.**

**COTUZA, in Ancient Geography, Al-Alah, a town of 5 Africa,
;

COT

C O T

Afrfca, which was fitusted on the brow of a hill between
Hippo-Zaritus and Rufcinona. Tliis was the molt northerly
tow n of Zeugitania.

COTY^UM,

a town of Afia Minor, in the Greater
Pnrygia, according to Strabo, Ptolemy, and Pliny.
a town of Alia, towards Pamphyh'a.
or Coti'la, a liquid meafure in ufe among

COTYALIUM,
COTYLA,

the ancients, equal to the Roman femi-fextary.
Savot adds, that the Roman cotyla contained twelve
ounces of any liquor: uuon which principle there muft have

been as many cotyla: as there were liquors ordinarily fold ;
which is nothing ftrange, fince, in feveral countries, we [till
find meafures of different capacity, called bv the farre name,
when they contain the fame weights, though under different

" Leaves wedge-fhaped, fafciclcd, terminal; (Ion
thickened; branches flcfliy, fomewhat conical"
Root perennial.
Leaves green.
Flowers drooping, refl.-xed.
native of the Cape of Good Hope. 3 C.cuneata. Willd. 4.
Thunb. Pod. 83. " Leaves wedge- fhapec], fiefliy, hairy
vers panicied, hirfute."
Root perennial.
A native of
the Cape of Good Hope.
Non bibcr4. C. fempervivum.
(lein
Annals of Botany, 2. 444. " Leaves in globular
Mart.

A
:

II

;

fafcicles,

wedge-fhaped,

fcapes radical

entiie, ciliatefcabrous at the

p,imcle oblong,

edges

;

Root perennial,
throwing out globes of haves in the manner cf a fempervivum.
Leaves numerous denfeiy imbricated, broad and
fleftty, fcarcely pubefcent.
Scapes quite firnplc, about
;

lcofe."

.

bulks.

long, (lender, femi-cylindrical, pubefcent.
terminal, oblong; peduncles alternate, fhort, two or
ice- flowered, villousvifcid
braftes minute, lanceolate,
1

Fannius fays, the cotyla was the fame thing with the heinina,

16.

tab. 18.

which was

" At

half a fe:;tary.

rotylas, quas,

Hemiuas,

recipit

ii

tt

placeat, dixiffe I'cehit

gemiuas fextarius unus."

Chorier obferves, that the cotyla was ufed as a dry mpaone; from the authority ot Thu.cydides, who in one place mentions two cotyla; of wine, and
in another two cotylx- ot bread.
fure, as well as a liquid

COTYLE,

Cotyloid Cavity,

in /Inatomy, from
deep excavation in the os
innominauim, which receives the head of the thigh bone.
See Skeleton.
in Botany,
the
(xotiaAh ; Diofc.
fame as Ko-,u\n, a cavity ; fo calicd becaufe the leaves of fome
fpecies are hollowed into a kind of baton.) Linn. Gen. 578.
Wiild. 912.
Schreb. 7S8.
Vent. 3. 275.
Juff. 207.
Clafs and order, decandria pentagyuia. Nat. Ord. Succulents,
Semperviva, Jvifl.
Linn. Vent.
Gen. Ch. Cal. Perianth one-leafed, fhort, with four or
five fegments or teeth.
Cor. monopetalous, campanulate or
funnel-fhaped, four or five cleft.
Stam. Filaments eight or
ten, almoit the length of the corolla, attached to its tube ;
Pijl. Germs four or five, each of them with
anthers erecL

or

xotkXh, a cup, or meafure,

is

\cle

the'

COTYLEDON,

:

four or five nectareous fcales at the outiide of the bafe ;
flyles the length of the ftamens ; (iigmas limple, curved outPerk. Caplules four or five, oblong, inflated,
wards.
acute, one celled, one-valved, opening longitudinally at the
Seeds numerou,*, fmall.
inner fide.
Eff. Ch. Corolla monopetalous, with four or five nectareous fcales at the bafe of the germ.

Capfules four or

iive.

;

rather obtufe ; calyx villous-vifcid ; fegments lanceolate, the
length of the tube of the corolla ; corolla fimilar in colour to
fedum telephium, a little larger; tube adpreffed to the
rtrms; border rather erccl, with oblong acute fegments;
anthers fmall. globular-didymous, purple ; ftigrr.a very

A

n;.tive of the higher mountains in Georgia, between the Terek and the Kur. 5. C fpuria. Linn. Sp.
PI. 2.
Mart. 2.
Wiild. 5.
(C. afric3na frutefctns, folio
longo et angufto, fiore fiavefcente ; Comm. Rar. 23. tab. 23.
i urm. Afr. 43. tab. .19. fig. I.
and tab. 22. fig. I. Sedum
filial'.

africanum,

(lore hemerocallidis
Moris. Hift. 3. 474. tab. 7.
" Leaves fpatulate-lanctolate, flcfliy, quite en40.)
" Leaves fpatulate, obtufe
tire ; tlem fhrnbby."
Linn.
with a point, naked." Hort. Kew.
Stem very thick, with
obtufe branches, leafy only at the end.
Leaves naturally
oppofite, (in monftrous plants, alternate,) pctiohd.
Scape
terminal, a foot high, fomewhat unibelled, divaricated.
Flowers drooping, yellowifli ; border revolute, fprinkled
within with minute red fpots
flattens a little longer than
the tube; anthers red.
Linn. Mant.
Obf. La Marck
fuppofes that Lmnseus, under this name, has confined two
different plants, which he thus diftinguifhes.
1. C. teretiC. africana, fiore pulcherrimo
folia.
Tourn. (.0.
I.Torif.
Hilt. tab. 7. fig. 40.
Pink. tab. 223. fig. 1.
Burm. Afr.
" Leaves altab. 19. fig. I.
Pet. Gaz. tab. 89. tig. 2.
moit cylindrical, flefiiy, obtufe, narrowed at the bafe j ftem
;

fig.

1

;

;

thick, Ihnibby." Stem fcarcely a foot high, a little branched.
Leaves the length and thickntls ot ? finger, without a coloured border.
Scape terminal, a foot long, branched into

corymb.
Flowers very handfome, reddifh within, drooping; border reflexed.
native of Africa, in rocky and
faudy places near the fea.
This, we apprehend, fliould retain the Linnxan name.
2. C. ungulata.
Burm. Afr. 54.
'• Leaves oblong,
tab. 22. li^. 1.
flefhy, femi-cylindi
channelled, with a callous purple border near the tip." Stem
flelhy, fhrnbby, about a foot long, and the thicknefs of a
finger, marked with the fears ot fallen leave's.
Leaves op polite, a finger's length, channelled on the inner tide,
vex on the back, greenifh.
Flowers red, drooping. 6. C.
purpurea.
Willd. 6.
Thunb. Prod. 83. " Leaves linearoblong, flcfliy, fmdoth
lowers panicled." Root perennial.
native of the Cape of Good Hope.
7. C.
" Leaves fiefliy, nearly cytindi
Willd. 7. Thunb. S3.
hirtute ; flowers panicled; Item hirfute."
Root perennial.
a

* Flowers

A

jive-cleft.

culata.
I.
Mart, 1.
Lam. 1.
Sp. I. C.
" Leaves orbiculate, fiefliy, flat, quite entire;
Wilid. I.
" Leaves ovate-fpatu.ate, obtufe
Linn.
ftem fhrnbby."
with a point, evtnlurfaced ; flowers panicled." Hort.
474. tab. 7. fi/. 39. /3. "Leaves oblong fpatulatc ftem
Hort. Kew.
ovate-fpatulate; item
erccx."
y. Leaves
culata ? Will. 2.
"Shrubby; leaves oblong-egg-fhaped, ftffile; panicle diS. "Leaves orbiculateipatulate
varicated, branched.")
item treft."
Hort. Kew.
Root perennial.
Stem two or three feet high, olten (hrubbv, branched,
Leaves oppofite, flcfliy, glaucous,
with a whitifh bark.
purple at the edges. Flowers campanulate, reddilh. ; fcape
native of the
a foot long, branched at its extremity.
2.
Willd. 3.
Cape of Good Hope.
C. fafcicularis.
;

;

A

•

;

A

A

i

native of the

Mart.

it.

" Leave.

s i

Cape of Good Hope.

Willd.
ylindrical

8. C.
Linn. jun. Supp.
Thunb.
flowers panicled, Item fhrnbby."
Pe-

8.
;

A

P/owsri yellow.
native of the Cape of (
Willd. 9. " Leaves cylindrical flowers rtticulatt-panic d ;
2
item

rem.ml.

1

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T

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COTYLEDON.


"*" Flowers four-leaved.

23. C. pinata. Lam. 12. "Leaves quinane-pinata; leaflets fuscous egg-shaped; creataereae fuscous-bearded; flowers..."


Propagation and Culture.—The African and East Indian kinds are propagated by bowling cuttings in any of the summer months, which should be previously placed in a dry place for a fortnight or three weeks, till the wounded part may heal, and the redundant sap evaporate. They thrive best in a compost consisting of one-third of fresh straw, and two-thirds of dry straw and rotten man in equal quantities; these should be well mixed, laid in a heap six months, turned over five or six times, and finally pailed through a screen. The cuttings should be planted separately in small pots, set for about a week in a warm shady place, and then plunged into a moderate hotbed of tanners' bark, where they should be shaded from the sun, and allowed fresh air as often as the weather will permit. In about six weeks, or two months, they should be gradually hardened by drawing the pots out of the tent; a week after, they may be removed into the green-house, and after another week exposed to the open air, in a well-tilled situation, where they may remain till the beginning of October; being allowed only so much water as is necessary to keep their leaves from shriveling. They are best kept during winter in an open, airy, dry glass house, among the tender succulent plants, where they may enjoy as much sunshine as possible; for if kept in a common green-house among flaxly plants, they are apt to imitate too much mother, often cast their leaves, and sometimes entirely perish. C. laciniata requires a moderate flower in winter, and will not bear the open air in our climate during any part of the year. The hardy European species thrive best when grown upon a wall, or among rock work, similar to their natural situation.

COTYLEDON africana frutescens folius officinae angustulat Mart. See Crassula febrina.

COTYLEDON africana frutescens flore carnoso amplexo; Breyn. See Crassula coccinea.

COTYLEDON africana frutescens flore umbellato coccineo; Comm. Brdld. See Crassula coccinea.

COTYLEDON altera matthioli; J. Baur. See Saxifraga cuneifolia.

COTYLEDON altera montana; Clus. See Saxifraga cuneifolia.

COTYLEDON aquatica; Lob. See Hydrocotyle vulgaris.

COTYLEDON aquatic; Schum. See Hydrocotyle umbellata.

COTYLEDON ant fedle species; Gei. See Saxifraga cuneifolia.

COTYLEDON flor subor media; Herm. See Crassula alternifolia.

COTYLEDON medus et minor folis ferratis; C. Baur. See Saxifraga cotyledon.

COTYLEDON palustris; Dod. See Hydrocotyle vulgaris.

COTYLEDON fligeria; C. Baur. See Sedum flelligerum.

COTYLEDONES, the cotyledons, or seed-lobes, are a pair of roundish or compli ed bodies, constituting the chief bulk of molt feeds, and immediately attached to the embryo. See Corculum. They commonly rise out of the ground, with the plumula, as soon as the young root has established itself, and assume the appearance and office of leaves, till the real foliage comes forth. Afterwards, sooner or later, the cotyledons wither and fall off. Their original figure differs widely in different tribes of plants, and much more their form and appearance in a leaf state, when, moreover, they usually bear no resemblance to the real leaves of the species or genus to which they belong. In the latter they are orbicular; smooth and convex below; rugged on the upper side; in the radish inerely heart-shaped; in umbilicertous plants long and lanceolate; being in all these examples remarkably different in shape, texture, and surface from the leaves of each. The same parts in the pea, bean, or vetch family, frequently remain under ground but little altered, the plumula being bent up as if to become the stem and leaves of the plant. The same thing takes place in the horde-cuckoo, sailor, and Cyamus Nettarius. We presume such tuberous-rackets cotyledons are defined to perform the usual functions of those organs with respect to air, but not to light, for being never exposed to the latter, they never acquire that green colour proper to leaves, which is owing to its action, and which acceding cotyledons do assume. We speak of these bodies in the plural, because we doubt very much whether any plant can be said to have a solitary cotyledon, unless we understand...
COT

dardin land as such the vitellus of Gärtner, which is mostly simple; if so, the latter term becomes superfluous. Some few plants are acknowledged to have more than two cotyledons, as the fir genera, Pinae, and its allies; mosses also, Herbert reported to have but one, are now drawn by Hegew to have numerous, as well as compound cotyledons.

The organs in question are not in all cases confined to the functions of leaves. They are frequently the repository of farinaceous matter, defined to be absorbed into the embryo for its nourishment, till the root can furnish due supplies. This is evinced by a sweet taste perceptible in the cotyledons of many seeds as they begin to germinate. Dr. Darwin supposes, with great probability, that melon and cucumber seeds, if kept long before they be sown, grow less luxuriantly in their herbage, owing to this nutrition farina being partly supplied by keeping. The fact is well known to gardeners, who purposely prefer such seeds for some years, that the plants may prove more compact and manageable, as well as more abundant in fruitation. In many plants this nutrition farina forms a distinct body or organ by itself, denominated by Gärtner albumen, which term not having been explained, in this sense, in the former part of this work, we shall mention it here. The bulk of the feed in wheat, barley, and all the natural order of grasses to which they belong, as well as in palm, and many other plants, is made up of the albumen, or white, a substance of a farinaceous, horny, or even floury texture. This never riles out of the ground, but becomes soft and even milky, acquiring more or less of a sweet taste, as soon as the processes of germination begins. The operation of malting must be well known to confess in first promoting this process by moisture, and then flapping it by such a degree of heat as destroys the vital principle, by which means the sweet albumen is obtained for use. See MALT. Plants thus circumstanced have been named monocotyledones, or furnished with a single cotyledon; those with two being called dicotyledones, and those with more than two polycotyledones. It seems, however, that the first have scarcely any cotyledon at all, grasses and corn indeed having a scale only, very diminutive and inconspicuous, situated between their albumen and embryo, which is the vitellus of Gärtner, a part he supposes to contribute to the nourishment of the seed. Such an opinion, however, is scarcely tenable, when we reflect how amply food is supplied by the albumen. The writer of the present article therefore has first presumed the vitellus, in whatever form it presents itself to our notice, to be analogous to a cotyledon, so far as air only is concerned; and he further presumes that many tribes of plants, graced by writers of botanical skills to be monocotyledous, and as such making a primary division in their classification, are in fact acotyledones; even grasses scarcely deserving, on account of the flight scale or rudiment of a vitellus above-mentioned, to be called monocotyledous, and certainly not so to be denominated from the simile form of their albumen, according to the hitherto received idea. But whatever may be determined with respect to grasses, it is allowed that palms and lilies have not even the rudiment of a vitellus, much less any acknowledged cotyledon. Yet these two families have such an affinity to grasses, that veteran writers on natural orders must, somehow or other, square their definitions so as to arrange them near together; while mosses, in many points more nearly related to them than to any other plants, may, if the cotyledons are to be regulated, be left far away. We mean by these suggestions, merely to collect facts; well aware that a natural system of arrangement, the great desideratum in botanical philosophy, is only to be brought in any degree towards perfection by the labour and attention of ages, and that nothing but disjointed materials can as yet be obtained towards the intended edifice, whose plan is yet in embryo. We readily admit that the parts of the seed, especially the cotyledons and albumen, promise the most stable foundation of this edifice; but they must be applied in a different manner to this purpose from what they have hitherto been. We are happy to see that the great leaders in this department of botanical arrangement, Jussieu, is laudably zealous to profit of, and to publish, the remarks and discoveries of his eminent fellow labourers Gärtner. By the co-operation of such minds, science is really advanced, and such only can lend any beneficial assistance to fo deep a subject. S.

COTYLEDONIDES; Brdl. See CASSIA tetragonos.

COTYLYS, or Cotylus, in Antiquity, a vessel with a narrow mouth, a very wide belly, and only one handle.

COTYLIUM, in Ancient Geography, a strong place of Asia Minor, in Phrygia.

COTYLIUS, a mountain of the Peloponnesus, in Arcadia. Paufanias says, that it was situated at the distance of 40 stadia from the town of Phigalia.

COTYLON, a place of the Peloponnesus in Arcadia, upon mount Cotylius, and above the temple of Apollo. Paufanias says that it had a temple of Venus with her statue, and that in his time it was not inhabited.

COTYLUS, a hill of Asia Minor, in Phrygia, according to Strab. In the time of Hecataeus, who says that it formed a part of Mount Ida, and that the Scamander, the Granicus, and the Euplex issued from it.

COTYNES, a town of Italy, possessed by the Aborigines, and taken by the Sabines.

COTYORA, a Greek town and colony, situated on the coast of the Euxine sea in the country of the Thibarionis. It is said to have been founded by the inhabitants of Sinope, and that it was their emporium or mart of commerce.

COTYRGA, a town situated in the interior of Sicily, Polenye.

COTYTIA, or COTTITIS, in Antiquity, a nocturnal festival, in honour of Ceto, or Cottis, the goddes of wantonness. It passed from Thrace to Athens, where it was introduced by Alcibiades. This feast was observed by the Athenians, Corinthians, Chians, Thracians, and others, and celebrated with rites suitable to such a goddess, who was delighted with nothing so much as licentious and debauchery; and the priests practiced all sorts of effeminacy and merricious arts. Another festival of the same name was celebrated in Sicily, in which the worshippers carried huge meals with cakes and fruit, which any person might pluck off and devour. This festival is said to have been observed in memory of the rape of Proserpine, who is by some thought to be the same with Cottis. The worship of this deity was transferred from Greece to Rome. The priests were named Bana; which see.

COTIZANUMI, in Ancient Geography, a town of Asia Minor, in Phrygia.

COTZIO, or COZAT, in Geography, a town of Bosnia, on the river Draca; 104 miles S.W. of Belgrade, and 108 S.E. of Banjuluka.

COVA, a town of Portugal, in the province of Beira; 3 leagues N. E. of Vifon.

COVA, in Ornithology, the name given by Buffon to the CUCULUS erythraeus of Gmelin.

COVALAN,
COULAM, in Botany. See CRATEVA marnioides.

COUANG-YANG, in Geography, a town of Aila, in the kingdom of Corea; 42 miles S.S.E. of Koang-techeou.


GEN. Cra. Cat. Perianth one leafed, four toothed, with a small scale at the base. Cor. monopetalous; tube oblong, attached to the lower part of the side of the calyx; border with four small divitias. Stam. Filaments more than twenty-five, lobed, united at the base, attached to the bottom of the calyx: anthers yellow, egg-shaped. \(P \) 7. Germ superior, oblong; style the length of the filaments; stigma acute. Peric. Legume? elongated, terminated by a point, composed of roundish knots separated from each other by strongly marked partitions, not opening. Seeds solitary in each knot.

Sp. C. frutescens. A shrub with the habit of a forphora. Stem five or six feet high, much branched near the top. Leaves alternate, winged; leaflets five, egg-shaped, acute, entire, green, petioled; spikes two, small, caducous. Flowers white, in axillary and terminal racemes. A native of Cayenne, where it is in flower and fruit almost the whole year.

COUCH, in Gaming. See Basset.

Couch, in History, try to terra cotta used to express a shield hanging downwards. The origin of this acquisition is supposed to have been that the persons who were to fight in the tournaments, from the time when proclamation was made, till the day of fighting, hung up their shields by one corner from the windows of the neighboring houses, or on the trees or barriers of the ground; it the tournament was to take place in the fields. The horse combatants hung up their shields by the left corner, and the foot combatants by the right. Some heraldic writers express this position by the word pendant.

Couch, in Malting. See Wet couf.

Couch, in Painting, denotes a lay, or impression of colour, whether in oil or water, wherewith the painter covers his canvas, wall, wandcock, or other matter to be painted.

The word is also used for a lay or impression on any thing, to make it more firm and consistant, or to screen it from the weather.

Paintings are covered with a couch of varnish; a canvas to be printed must first have two couches of size, before the colours be laid; two or three couches of white lead are laid on wood, before the couch of gold be applied: the leather-gilders lay a couch of water and white of eggs, on the leather, before they apply the gold or silver leaf.

The gold wire brushes also use the word couch for the gold or silver leaf wherewith they cover the masts to be gilded or silvered, before they draw it through the iron that is to give it its proper thickness.

The gilders use couch for the quantity of gold or silver leaves applied on the metals in gilding or silvering. Each couch of gold is but one leaf, or two or three, and each of them, three, to gild: if the gilding be tatched, there are required from eight to twelve couches; and only three or four, if it be without tatching. To silver there are required from four to ten couches, according to the beauty of the work.

Couch Grafs, in Agriculture, the name of a plant of the weed kind, the (triticum vulgare) which is well known to the farmer from the expense, labour, and trouble which it causes in many fields, in removing it from arable lands. It is the pest of these sorts of ground, in many situations, as from its nature and habits of growth it cannot be extirpated without considerable difficulty. It has numerous long jointed or knotted creeping roots, which insinuate themselves in the soil in various directions, and which, after being broken by the plough or harrow, have the property of quickly producing new plants. The ordinary method of destroying it is by laying the ground to fallow in a hot dry summer, and harrowing it frequently over well, to draw out the roots in every piece of which should then be collected and burnt, or otherwise destroyed. Where this work is carefully and effectually performed, the ground may be so well cleaned and freed from it in one summer, that the remaining roots will not be capable of doing any great injury to the ensuing crop; but as the belt way is probably to sow the land in which this weed prevails with the seeds of such plants as require a frequent application of the horse manuring culture; or with such sorts as produce plants which are capable of keeping it from growing by their shade and great clover-like stems. The blade of this grass is said by some to be too rough, that the cattle will not feed upon it when green. Trench-ploughing is recommended by Mr. Young in the Annals of Agriculture, as a proper method to destroy couch grass; where he thinks that by one carrying green deeply with the flim-counter plough, and after that a hooeing flim on the surface, the couch may be converted to a mulch. It is ordered by the author of the General view the Agriculture of the Country of Saug, that this weed, which is here termed quach, is everywhere common, to the great expense of the husbandman. And Mr. Rudge, in the Report of the Country of Gloucester, finds it a most troublesome and almost unconquerable weed on clay lands; on the light lands and loams, he thinks, it may be dragged out; and finished by hand-picking with tolerable ease, but that on the flint or loams, and particularly in the wet fowrrows, nothing but repeated ploughings and exposure to the sun, during the heat of summer, can check the increase of it; hence, after a wet summer, the vale lands, in that district are, he says, generally foul. And he recommends a crop of spring vetches, as well suited to the other and keep it down.

But it has been faggotted by Dr. Withering, in the authority of Mr. Southwell, that though this weed is commonly laid to be refused by cattle, at Naples the roots are collected in large quantities and sold in the market to feed horses; they have a sweet taste, something approaching to that of liquorice; when dried and pounded to meal, they have been made into bread in years of scarcity. Dogs eat the leaves to excite vomiting. And horses eat them when young, but have them when full grown. Cows, sheep, and goats, also eat them. It is likewise suppos'd that from their detergent quality they may be beneficial in the diseased livers of animals: as cattle which have been found to have distemper livers in the winter, soon get cured when turned out to graze in the spring.

But though this is suppos'd the most common sort of couch or quach in garden grounds, Mr. Pitt considers the quach of arable lands as consisting of several species of plants belons above, as different kinds of Bent grasses, (the agrostis alba, and julifera) the tall oats grass (awnus elata) and the creeping foxt grass (boletus mollis), and probably of the roots of some other of the hardy perennial grasses. The spreading knotty creeping sorts of these several plants, are, he says, sometimes so interwoven together, in the soil, in sand that has been under land tillage and bad management, as to form a perfect matting, and choke the plough; that they, when moist in spring, when their nutrally unfulfilling strong clay, It is conceived, that not one tenth part of the couch or quach of arable land is produced by the dog's
When the couch grafts, the teeth, into the middle meadow puffins, a horizontal beam is fixed, upon which are laid the couch grafts, fixed in beds, on the land, or by the use of the rake head, a third time, that the weeds, which have been collected, may be thrown aside or raked, for the sake of the soil, which is thus made productive. The couch grafts are then placed in beds, on the land, or by the use of the rake head, a third time, that the weeds, which have been collected, may be thrown aside or raked, for the sake of the soil, which is thus made productive.

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COU

three of each other; f.f, regulating wheels, fixed in the outer mortar of the rake head, being made fast by screws at the ends of it; which prelides on the shank of the wheel; g, g, handles by which the rake is lifted up and cleaned; h. h, forked iron bars hanging on hooks; i, i, and fixed in the rake head; i, iron hooks fixed in the axle-tree; k, wooden bar four feet in length and four by two inches square, for bracing the shafts together; l, l, two iron rams for barring the shafts more perfectly, being made fast to the axle-tree and shafts by iron bolts; m, m, two pins for fixing the wheels at any required depth. In conveying the implement from place to place, the rake head is raised upright and fastened to the brace k.

It is remarked that the belt iron, for commencing the process of clearing land by this tool, is in the interval between the second and third flurries or ploughings of the fallow. In the execution of the business the first thing to be effected is, the rendering the land fine by harrowing and rolling, when it should be left under the impression of the roller, that the surface may be even, and the clods forced down out of the way of the rake. After this it may be raked cross-ways of the ridges, and when the tool has collected as much of the weeds as it can hold in a perfect manner, the handles should be lifted up high enough by the person who directs it, to admit the weeds to drop off from the teeth; and then proceeding again the rake be dropped full beyond the row of weeds which have been brought together; repeating the same as often as the rake becomes full, till the whole is completed at the side of the field. Then in returning by the side of the raked part, the rake is emptied adjoining the first row; by which means the weeds are left in straight rows lengthways of the land. After the field has been finished in this manner, the different rows should be collected into heaps, forked over to lighten them, and then burnt. Or, probably, a better method is to incorporate them with lime in its caulic flote, so as to convert them into manure, to be afterwards blended with vegetable mould or other earthy subfances.

It has been hinted that this tool may in some cafes be beneficially converted to the purpose of raking the hay in meadow lands into what are termed wind-rows, in order to their being made up into large cocks.

COUCHAKAR, in Geography, a town of Asiatic Turkey, on the road from Smyrna to Trebiz.

COUCHA-HOTUN, a town of Asia, in the country of Thibet; 62 leagues E.E.N. of Turfan.

COCHAN, a town of Asia, in the kingdom of Co-rea; 83 miles E.N.E. of Ning-ki-tao.

COUCHANT, an herbalic term to express an animal lying close to the ground, having the head erect in order to distinguish him from an animal dormant.

Couchant and Levant, in Law. See Levant.

COUCHE, JEAN, in Biography, a designer and engraver, born at Paris in 1759, was the pupil of the elder Alainet. Couche has distinguished himself amongst his contemporaries, by a judicious choice of his subjects, and a considerable degree of merit in the execution of them. In 1786, he undertook to publish the celebrated Gallery of the Duke of Orleans, which came out in numbers, the pictures being engraved from the designs of Borel by himself and other eminent artists. The following prints, having no other name than his own, are supposed to be from the designs of Couche.

1. A pair. 2. L'Amour volage. 3. L'Amour quèteur.

Vol. X.

COUCHE, in French Heraldry, couché, signifies a chevron placed either to the dexter or sinister side of the dexter lion, with the point toward the centre.

COUCHER, or COUCHER, in our Statute, is used for a factor, or one that continues in the same place or county for traffic; as formerly at Calais, for the buying of whe.

Anno 37 Edw. III. c. 16.

COUCHES, is also used for the general book, in which any religious house or corporation register its particular acts.

Anno 3 & 4 Edw. VI. c. 12.

COUCHETOU, a town of Asia, in the country of Thibet; 9 leagues E.E.N. of Coucha-tool.

COUCHI, a town of Chian, of the third rank, in the province of Honan; 30 miles E.N.E. of Kowang.

COUCHING, in Agriculture, a term frequently made use of by the older writers on husbandry to signify the operation or process of clearing tillage lands from roots of weeds, or the curstic traffic; or other kinds. See Fallow, and Fallowing of Land.

Couching the Cataract, in Surgery, signifies the defcription of it towards the bottom of the eye: this term seems to be derived from the French word couchant, lying down. (See the article Cataract.)

In the article above referred to, the reader will find a detailed account of the different kinds of cataract, the circumstances under which an operation for its removal may be advised, and the modes of extracting it; also a short description of the methods used by several foreign practitioners for the defcription of the cataract. But, we purposely referred some observations on this latter part of our subject for the present occasion; and therefore shall now describe the modes of defcripting which are followed by English surgeons, especially by a judicious and skilful surgeon of Leeds, who is a strong advocate for this operation, in preference to extration. Mr. Ware, Mr. Whitley, Mr. Philips, and most of our other occults, have practised extraction rather than the defcripting. Mr. Pott, indeed, did not altogether adopt the fashion in this respect; but the ideas of Baron de Wenzel, far prevailed in England, as almost to exclude the defcripting it from our practice. (Vide Mr. Ware's translation of M. de Wenzel's Treatise on the Cataract, left. v; and Mr. Hey's Surgical Observations, chap. ii.) Mr. Hey has very fairly and sensibly met all the objections of M. de Wenzel against this neglected operation, and gives a variety of interesting cases to illustrate his own practice: he is decidedly of opinion, that couching or defcripting is both easier and safer than the common mode of extraction.

When the cryllantine humour of the eye becomes opaque, the central part fomes always to be the full affected. From the centre the opacity extends in all directions toward the circumference, but rarely, if ever, reaches the circumference. For if that were the case, unless the capsule contained a transparent fluid surrounding the cryllantine, a mere opacity of this humour would be sometimes attended with total blindness, which, Mr. Hey believes, never happens without some other morbid affection of the eye. The chary procedures advance on all sides as far as the circumference of the cryllantine; therefore no rays of light can fall upon the retina without passing through the cryllantine.

In the operation of couching, the cryllantine can only be
be moved into some part of the vitreous humour, different from that in which it is naturally situated, unless it is brought into the anterior chamber. It cannot be lodged beneath the vitreous humour, as a valuable modern author speaks; for that humour is everywhere in contact with the retina, and fills up the cavity formed by the coats of the eye.

The length of Mr. Hey's needle is somewhat less than an inch. It would be sufficiently long if it did not exceed seven-eighths of an inch. It is round, except near the point, where it is made flat by grinding two opposite sides. The flat part is ground gradually thinner to the extremity of the needle, which is finer, and ought to be made as sharp as a lancet. The flat part extends in length about an eighth of an inch, and its sides are parallel. From the place where the needle ceases to be flat, its diameter gradually increases towards the handle. The flat part is one-fourth of an inch in diameter. The part which is nearest the handle is one-twentieth of an inch. The handle, which is three inches and a half in length, is made of light wood stained black. It is octagonal, and has a little ivory inlaid in the two sides which correspond with the edges of the needle.

The needle, made conformably to his directions, will pass through the sclerotics with ease. It will deprive a firm cataract readily, and break down the texture of one that is soft. If the operator finds it of use to bring the point of the needle into the anterior chamber of the eye (which is often the case) he may do this with the greatest safety, for the edges of the needle will not wound the iris. In short, if the operator, in the use of this needle, does but attend properly to the motions of its point, he will do no unavoidable injury to the eye; and this caution becomes the less embarrassing, as the point does not project beyond that part of the needle by which the depression is made, the extreme part of the needle being used for this purpose.

We have no certain criteria by which it can be known, previously to an operation, whether a cataract is soft or hard. Those proposed for consideration by Mr. Pott are not to be relied upon. When a cataract is complicated with a complete amaurosis, or a total opacity of the cornea, the removal of the diseased crystalline must be fruitless. But in partial affections of the eyes from these complaints, a patient may receive such a degree of relief from an operation as yields much comfort, though it fails short of distinct vision. An universal adhesion of the iris to the capsule of the crystalline, argues such a morbid state of the eye, that an operation cannot be undertaken without considerable doubt respecting the event, though the operation is not rendered thereby wholly improper. In this case, the iris shews no motion upon a sudden exposure to light, the pupil usually remains contracted, and is often irregular in its form. The operation has been done with success, where the adhesion was partial, by proceeding with great caution. In this case the pupil is contracted and dilated, by varying the degree of light thrown upon the eye. Sometimes when the pupil is circular in a strong light, it will, as being dilated in an opaque light, assume an irregular form, and thereby point out the situation and extent of the cataract.

Though it would be improper to perform the operation of coughing when the eye is in a state of inflammation, yet persons affected with a lippitude (see article Lippitude) bear the operation much better than one would expect from the appearance of the eyes in that disease. Mr. Hey has never rejected a patient on this account, but has repeatedly performed it with success, and with very little subsequent inflammation, when numerous vessels of the conjunctiva were turgid with blood, and the eyelids thickened, provided this state of the organ was habitual.

The author does not recommend an operation, if the disease is confined to one eye, while the sight of the other eye remains perfect. Nor is he hasty in recommending the operation in cases of cataract from external injury, as blows, or punctures of the cornea; having been led from experience to form the same opinion of the disease, when originating under such circumstances, which the late Mr. Pott entertained.

When the cataract is congenital, the eyes have often an irregular motion, as if the patient was looking at two distinct objects at the same time. The operation is rather more difficult in such patients, on account of the unsteadiness of their eyes; but it may be performed with safety, when the patient is so far advanced in years as to understand the design of the operation, and has been taught to direct it.

The habit of persons afflicted with cataracts is so different, that no general rule can be laid down respecting the manner of preparing a patient for the operation. In some cases, the loss of a little blood may with propriety be added to laxatives, and a strict regimen. In other cases, there may be such constitutional debility as to forbid any evacuation: and, in general, patients need only abstain from animal food and fermented liquors a few days previous to the operation, or a dose or two of any gentle purgative may be given.

Before we describe Mr. Hey's mode of operating, we submit to the reader Mr. Pott's answer to some objections which have been raised against coughing.

The objections made against the operation of coughing, at least those which have an apparent plausibility, Mr. Pott obverses, are reducible to four:

1. That if the cataract be perfectly soft, the operation will not be successful, from the impossibility of accomplishing the intention of it.

2. That if it be of the mixed kind, partly soft and partly hard, it will also most probably fail of success, not only from the impracticaibility of depriving the softer parts, but also because the more firm ones will either embue the point of the needle, and remaining in the posterior chamber, still form a cataract; or getting through the pupil into the anterior chamber, will there bring on pain and inflammation, and induce a necessity of dividing the cornea for their discharge.

3. That if the cataract be of the firm solid kind, and therefore capable of being depressed, yet in whatever part of the eye it shall happen to be placed, it will there remain undissolved, solid, and opaque; and, although removed from the pupil, yet prove some hindrance to perfect vision.

4. That, however successfully the depression may have been accomplished, the operation will necessarily occasion such disarrangement of the internal parts of the eye, as may cause very considerable mischief.

Mr. Pott obverses, that these objections, if they have any real weight, are of equal force in every species of cataract; and therefore are the more worthy of our attention; since, if they be founded on truth, they render the operation improper; but if they be not, misrepresentation and fashion should never induce us to lay aside any means which have been, and still may be, advantageous to mankind. The first and second, from frequently repeated experience he affirms not to be true. He means that the operation of coughing will not necessarily, nor even generally, be unsuccessful, merely because the cataract shall happen to be either partially or totally soft. On the contrary, although tho'
in order to ascertain the fact with greater certainty, Mr. Pott, when he has found the cataract to be of the mixed kind, has sometimes not attempted depression; but has contented himself with a free laceration of the capsule; and having turned the needle round and round between his finger and thumb, within the body of the crystalline, has left all the parts in their natural situation. In those cases he has hardly ever known them fail of diffusing to entirely as not to leave the smallest vestige of a cataract.

In a few instances, where he has had fair opportunity, he has pushed the firm part through the pupil into the anterior chamber, where it has always gradually and perfectly dissolved and disappeared, without producing any pain or trouble during the whole of that time.

Mr. Pott observes, that if the remarks above-mentioned be well founded, some other important consequences will result from them:

11. If the soft cataract will, when its capsule is properly wounded, mix with the aqueous humour, and undergo a perfect dissolution and absorption, as to leave the eye fair, clear, and fit for vision, and which he has often experienced beyond any doubt, it will then follow, that the cataract of a cataract is so far from being an unlucky circumstance, that it is rather a fortunate one; as it enables the patient to receive the more early affilitation; and that from an operation attended with left pain, and a left violation of parts, than a firmer one would necessarily acquire.

24th. When the cataract is of the mixed kind, and which therefore frequently baffles all the attempts towards depression, the firmer parts may very safely be left for dissolution, and vision be thereby restored.

During this operation Mr. Hey directs the patient to be seated in a chair somewhat lower than that on which the operator sits, that the arm of the operator may not be much elevated. An elevated position of the arm soon produces fatigue, and renders the hand less steady. The eye of the patient should be exposed to the light of one window only, and that should admit no more light than is necessary, for seeing the interior parts of the eye distinctly. If the patient's head is placed a little obliquely to the light, the picture of the objects reflected by the cornea (which often prevents a distinct view of the cataract) is thrown to one side of the pupil, and then creates no impediment to the operation. A horizontal light is in this operation preferable to a sky-light. The head of the patient must be kept erect, or inclined a little forward, by an assistant who places one hand upon the forehead, and another under the chin, supporting at the same time the eye by a pillow interposed between it and the bridge of the assistant. The eye, which is not the immediate subject of the operation, should be kept steady by a proper bandeau, and by a gentle pressure from that hand of the assistant which is placed upon the forehead. If a specular veil is not used, the operator may support the upper eyelid with the thumb of one hand, and with the ring finger of the other hand, which holds the needle, depress the lower eye-lid till he has introduced the needle. After that, it is more convenient to have the lower eye-lid held down by an assistant.
COUGHING.

The needling of the eye should be turned a little inwards, and the eyelids gently pressed against the edge of the orbit, and the globe of the eye. This gentleman says he has found the common follicular oculi to be inconvenient, and has never tried that which is recommended by Mr. Benjamin B. He should be directed to turn his eye inwards, as if he were looking at his hole, that the part in which the puncture is to be made may present itself to the operator, and that the conjunctiva may be put upon the stretch. If the conjunctiva remains wrinkled where the needle enters the eye, the operator will find his instrument so entangled as greatly to impede the regularity of his motions.

The needle being blemished with oil, should be pushed suddenly through the coats of the eye. The direction in which this is done is of some consequence, especially if a spear-pointed couching needle is used. The needle should not be pushed through the fovea in a direction parallel to the iris; for pressure made in that direction is apt to give a rolling motion to the eye, and thereby alter the course of the needle. If the eye be made to roll towards the nose, the point of the needle will then be directed towards the iris, and the operator will be in danger of wounding it. This danger may be avoided by piercing the fovea with the point of the needle directed towards the centre of the eye. By this method the eye is rendered steady, and the needle will pass through the coats without any danger of wounding either the iris or ciliary processes.

When the needle has pierced the coats of the eye, it must be pushed forwards in the same direction, till so much of the instrument is introduced, that its point, when brought forwards, will reach the centre of the crystalline. This part of the operation, as we have already observed, may be performed with greater exactness by the use of a short needle. If the length of the needle is little more than the diameter of the eye, the operator will be greatly assisted in judging when the point of his instrument has advanced to the axis of the pupil, which corresponds with the centre of the cataract. It is not absolutely necessary that the needle should be introduced at one determinate distance behind the ciliary ligament. Indeed, the want of steadiness in the eyes of some patients renders this impracticable; but our author considers the distance of about one-sixteenth of an inch to be the most convenient. The operation may be performed with great ease and safety, when the needle pierces the fovea near the ciliary ligament. So far the operation must be conducted in the same manner, whatever be the state of the cataract. The remaining part of the operation must be varied according to the circumstances of the disease.

If, in bringing forwards the point of the needle, we perceive the cataract to advance, and dilate the pupil; we then know that the cataract is firm, and that the needle is in contact with its posterior part. The pressure used in bringing forwards the cataract, sometimes causes the point of the needle to sink so far into the crystalline, and to become so much entangled in its more tenacious part, that the depression may be completed, though the instrument has not been seen through the pupil. When, therefore, the appearance which has been mentioned takes place, our author does not permit in bringing forward the point of the needle, lest the iris should be injured by the too great dilatation of the pupil; but depressing the point, at the same time that he carries it backwards. If this motion of the needle removes the cataract from its place, the operation is usually concluded without any further trouble.

If the cataract does not follow the motion of the needle, he cautiously brings forward its point through the softer part of the crystalline, till he can see its instrument through the pupil, and then proceeds in his attempts to effect the delusion. In these attempts he always moves the needle backwards as well as downwards; for the operator ought always to be fore, that his needle is behind the ciliary processes when he moves it upwards or downwards. Before Mr. Hey withdraws the needle, he usually elevates its point a little to see whether the cataract rises again when the pressure is removed. If it does, the pressure is renewed once or twice, and the needle is then withdrawn. He always endeavours to lodge the cataract below the place where his needle entered the vitreous humour, and withdraws the needle in a direction nearly parallel with the axis of the pupil.

Though Mr. Hey does not think it advisable to perform, in pricking an entire cataract into the anterior chamber, when the advance of the cataract causes a large dilatation of the pupil; yet after the needle has wounded the capsule, a firm cataract, or at least its nucleus, will sometimes flip through the pupil without the design of the operator. This has been observed by some authors as a disagreeable circumstance, and has been ranked amongst the objections to the operation. The author of the couching operation has condescended to be considered as a favourable event, since the cataract always diffuses in the aqueous humour, and finally disappears without any injury to the eye. This, at last, has been the event in every case of the kind, which the author has seen.

He has six or seven times seen the whole opaque nucleus fall into the anterior chamber of the eye, and very frequently small opaque portions. Indeed, if the cataract could, in all cases, be brought into the anterior chamber of the eye, without injury to the iris, it would be the best method of performing the operation. But this is not usually practicable; the fibres, as well as the bulk of the cataract, presenting an obstacle to this process.

If the crystalline, or rather its capsule, is found to adhere in part to the iris, great caution should be used in our attempts to destroy the adhesion; as it is much more safe to repeat the operation after a gentle attempt, than by continuing the use of force to remove the danger of an inflammation. It is useful in this case to lift up the cataract with the needle, as elevation may be practised where the cataract has failed to fall. On the contrary, it ought to be considered as a favourable event, since the cataract always diffuses in the aqueous humour, and finally disappears without any injury to the eye. This, at last, has been the event in every case of the kind, which the author has seen.

Hitherto the cataract has been considered as firm, and capable of bearing the pressure of the needle; but in the greater number of patients which have fallen under the care, the cataracts have been found to so soft as to permit the needle to pass through them in all directions. In this state of the disease, he does nothing more than break down the texture of the cataract, and endeavour to puncture, or tear off, a portion of the capsule, that the aqueous humour may flow in upon the broken cataract. In doing this, it is common to see some fragments of the cataract fall, through the pupil, into the anterior character of the eye. Mr. Hey is always glad to see this take place, as he then knows that there is a passage opened for the admission of the aqueous humour and that those opaque fragments, which have passed through the pupil, will soon disappear.

Sometimes the cataract is so uniformly soft, that the passage of the needle through it makes no alteration in its appearance. This species of cataract was considered by the late Mr. Sharp and Mr. Warner as incurable. In this opinion these excellent authors were certainly under a mistake; for
COUCHING.

for we find that although an uniform softness of the cataract may require a more frequent repetition of the operation, it affords no permanent impediment to the cure. Upon repeating the operation in such cases, Mr. Hey has often found, that the first operation had produced more effect than at the time of operating it appeared to produce. The cataract, upon a subsequent operation, appears more violent, and irregularly opaque. Some portions may now be removed, which before appeared immovable; some fall into the anterior chamber; and the remainder becomes gradually diffused in its original situation.

When both eyes are affected with a cataract, Mr. Hey usually operates upon them both at the same time; nor has he seen any reason for discontinuing this practice.

That gentleman always operates upon the right eye with his left hand. A surgeon may easily acquire the power of using his left hand in this operation, if he accustoms himself to bleed with the left hand, whenever a proper opportunity offers.

After the operation, we cover both the eyes, though only one may have been touched, with a broad piece of linen, spread with unguentum creas. and fastened to a ribbon tied round the head. The patient’s face should not be exposed to a strong light, nor to the heat of a fire, till the tenderness of the eyes is gone off. A strict regimen should be observed for a few days; and a gentle laxative may usually be given with advantage.

When the nature and variety of the parts wounded in couching are considered, a person not accustomed to this operation might reasonably conclude, that it would usually be followed by a considerable degree of inflammation. Yet we may with truth assert, that when it is performed in the manner above described, the usual consequence is nothing more than a tenderness of the eye, which goes off by degrees, if the patient uses the proper cautions. Frequently the eye appears as free from inflammation as it did before the operation, excepting a slight redness in the conjunctiva, where the puncture was made. Nor is the operation itself attended with that degree of pain which one might reasonably expect. It is commonly spoken of by the patient as inconsiderable.

Though the inflammatory affection, which is immediately subrequent to the operation, is generally slight, yet it must be confessed, that it is sometimes considerable: and we have also observed, that the patient’s eye is more susceptible of inflammation, from any irregularity, for two or three weeks after the operation. Some of the worst attacks of inflammation, which Mr. Hey has seen, have come on at so late a period; when the patient, presuming upon the comfort in which he had found himself, has incautiously exposed his eye to a cold blast of air, or has caught cold by any other means.

In the case of subrequent inflammation, Mr. Hey places the greatest dependence upon the evacuation of blood from some branch of the temporal artery. The quantity and frequency of the evacuation must be directed by the circumstances of the case; but it ought to be used freely, till the inflammation begins to subside. Purgatives, and other cooling remedies should be added. Warm soft water, directed in a gentle stream across the eye, abates the pain in the acute stage of the inflammation. When that has somewhat subdued, the face, the neck, and head, if not covered with hair, should be frequently washed with cold water.

Sometimes, when the eye is not inflamed, the patient feels pain in the forehead; just above the eye-brow, which is now and then accompanied with sickness or vomiting. This complaint is the most effectually relieved by an opiate.

We have seen a few instances where the eye, upon being examined some days after the operation, has appeared to be affected with an amarousis. The pupil has been found largely dilated, and the patient has had a weak perception of light. We know not how to account satisfactorily for this accident, which, as far as we have observed, is more alarming than dangerous. In the few cases of this kind, which have fallen under our notice, bleeding has appeared to relieve the complaint; the iris has, by degrees, regained its contractile power, and the retina has been restored to its natural sensibility.

It would scarcely be necessary to mention the rising again of the cataract, when enumerating the consequences of the operation, but that some good authors have considered this as a circumstance, which affords an important objection to the operation of couching, and renders it fruitless. This circumstance may require a repetition of the operation, but throws no hindrance in the way of the cure.

If the cataract, though risen again into view, appears detached, so as to move freely and readily in the vitreous humour, with every motion of the head, it will generally, by degrees, subside, and finally disappear without any farther attendance.

A frequent and most important consequence of the operation, and one that succeeds the method of extraction, as well as that of depression, is an opacity of the capsule of the crystalline. This secondary cataract will appear when no inflammation has succeeded the operation. It will sometimes disappear by the effect of time, as in cases of cataract from blows or punctures; but this event is often slow, and always uncertain. If time does not remove this cataract, recourse must be had to the needle. When an aperture has been made in the centre of the capsule, at the time of the depression, and remains so large as to enable the patient to see distinctly, the opacity of the surrounding part of the capsule need not be regarded. But if any opaque portions occupy the axis of the pupil, and do not soon show some return of transparence, it is proper to repeat the operation, for the purpose of breaking the alnuder, or removing the opaque portions.

When portions of the opaque capsule hang floating in the posterior chamber of the eye, it is difficult to pierce, or lay hold of them. The attempt to remove them must be made in different directions, yet with great caution, lest the iris should be injured. Mr. Hey has sometimes succeeded in detaching these portions by moving his needle upwards, when the motion downwards has failed to lay hold of them.

When the capsule appears in cross threads, like net work, the instrument will readily break them alnuder. Sometimes the capsule has a considerable degree of elasticity, and springs up again immediately with force after being depressed. When fragments of this kind are near the circumference of the crystalline, and do not materially interfere the passage of the rays of light, it is the most prudent method to leave them, lest the ciliary processes should be injured by tearing them off.

As the opacity of the capsule, which forms the secondary cataract, is usually diminished in some degree by time, it may be well to consult the inclination of a patient with respect to the time and frequency of these operations. A labouring man, who has a family to maintain by his work, will not perhaps regard a frequent repetition of the operation, that he may the sooner return to his labour. Persons of a higher rank often prefer a delay.

The vitreous humour does not appear to suffer from the least injury by the passage of the needle or cataract through it. 1
If there was any tendency in this humour to become opa\byte, we should frequently see this congress ensue from the operation of coughing. But no such consequence, we believe, was ever known to ensue. On the contrary, this humour seems to be more proper for the transmission of light, after the operation, as it was before.

Surgeons, who undertake the operation of coughing, should not be induced, by their desire of completing the cure at one operation, to use long continued efforts to deprive or break down a cataract. By such efforts there is great danger of injuring the eye. It has been too much considered as a matter of disgrace to the operator, if sight has not been immediately restored to the patient. The fear of this disgrace has probably conformed many an unhappy sufferer to irreconcilable blindeys.

There is no operation of surgery, which may not sometimes fail of success; but coughing, when conducted in the manner above described, so rarely fails to restore a considerable degree of light, if the cataract is not complicated with any other morbid affection of the eye, that it cannot be considered as attended with much uncertainty.

Coughing Needle. See Needle.

COUCO, or Couco, in Geography, a district of Africa, under the eastern government of the kingdom of Algiers, which derives its name from the mountain at the foot of which the metropolis stood, or perhaps from the city itself, once the seat of a kingdom, magnificent and powerful. It was situated, in a triangular form, southward of Algiers and Boujieiah or Bugia, about 36 miles from the former and 29 from the latter, at the foot of the mountain surrounded with deep rocks, which served it as a strong defence. On the summit of this mountain was a great number of farms and villages, both populous and rich; one of which, containing 500 houses, had a large market every Friday, to which the neighbouring people resorted in great multitudes. The princes posed likewise a port on the sea-coast called "Tamagou," between Bugia and Algiers, from which the city carried on a considerable trade in hides, wax, and honey, with Marseille.

The access to it was very difficult and dangerous, through narrow and rugged defiles, that a small number of men might overwhelm an enemy's army with flames; and besides, the city was fortified with strong high walls, on the side where it was least accessible.

In this flourishing condition it continued, under its princes, till the beginning of the 17th century, when the king of Couco, then in alliance with Spain, ceded to it the port of Tamagus, which the Algerines gained possession of soon after. In order to terminate all intrigues with Spain, they demolished the metropolis, ravaged the adjacent plains, and obliged the inhabitants to flee to the mountains. The Turks, however, have regarded the city and country of Couco, on account of its vicinity to Algiers and the inaccessibility of its mountains, with suspicion and dissatisfaction, because it was a sure refuge to their enemies and criminals of state; and particularly to some of their deys, when they apprehended the displeasure of the Porte, or on any other occasion when they wanted an asylum. The Algerines have therefore frequently attempted to reduce the inhabitants to subjection. These are distinguished by the name of Albanians, Bercheres and Azagues, and they value themselves on their independence; to the security of which they have sacrificed their wealth. From being once the richest people of all the inland countries in horses, cattle, grain, and fruits, and also from their manufacture of iron, and of linen and cotton stuffs, they are sunk into extreme indigence, avoiding all commerce with their neighbours, lest they should excite the jealousy of the Algerines, and afford a pretext for reducing them to the same condition of slavery with the other Arabs and Moors of Barbary.

COUCO, probably the Ouchan of Du Halle, a small town of Chinese Tartary on the northern frontier of the province of Petcheli in China, seated on a hill near a river which falls into the Hoan-ho.

COUCO-tharief, a town of Afis, in the country of Thibet; 4 leagues N. of Cha-te-chen.

COUCOUR-HOTAN, a town of Afis, in the country of Thibet; 70 leagues W. of Turfan.

COUCOURON, a small town of France in the department of the Ardche, with 9,7 inhabitants. It is the chief place of a canton which consists of six communes, and comprises a population of 4900 individuals on an extent of 162 kilometres and a half.

COUCY-le-Chateau, or Coucy-le-Chateau, a small town of France in the department of the Aisne, 15 miles west of Laon and 9 miles north of Soissons, remarkable for the ruins of a castle built by the ancient lords of Coucy, and repaired and enlarged by Lewis Duke of Orleans, brother to Charles VI. king of France. It is the chief place of a canton, contains 800 inhabitants, and must not be confounded with Coucy-le-Val, which is a village two miles distant from Coucy-le-Chateau. The canton itself contains 34 communes and 14,000 inhabitants, on 27,5 kilometres. It was in the old castle of Coucy that the celebrated looking glasses, or mirror manufactory of Saint Gobin, was originally established in 1601.

COUDOU, in Zoology, the antelope. Antelope oreas of Gmelin, antelope oryx of Pallas, mosanze of Schla, African elk of Kolben, eland and elk antelope of Sparrmann, and Indian antelope of Pentant, is an animal of a grey colour; having straight, tapering, sharp-pointed horns, surrounded at the base with a spiral ridge at the base. This animal inhabits India, Congo, and the vicinity of the Cape of Good Hope; found chiefly in the mountainous parts of the country, and living in herds, though the elder males are often solitary. They grow very fat, and are easily caught, as they cannot run swiftly, and often fall down dead during the chase. The coudou is thick in the body, strongly made, and near 5 feet high at the shoulder; the head is reddish, with a dullish line on each cheek, and a stripe of long loose hairs, on the forehead; the body is of blueish-grey colour, sometimes white and spotted with red and grey; it has a short black mane along the neck and ridge of the back; the tail is well-feathered, and tufted with black hairs at the end; the females have horns similar to those of the males, and both are made into tobacco-pipes by the Hottentots. The flesh is fine-grained, very juicy, and reckoned delicious. In this species the lacrymal groove is wanting.

COUDRAS, in Geography, a small island in the river of St. Lawrence, about 45 miles N.E. of Quebec.

COUDRAY-SAINTE-GENEVRE, a small town of France in the department of the Oise, with 485 inhabitants. It is the chief place of a canton which has 19 communes and a population of 10,339 individuals, on a territorial extent of 247 kilometres and a half.

COUDRET, CHRISTOPHER, in Biography, a French priest, who flourished last century, was intimately connected with the fathers of the port royal, in the contests which they engaged in with the Jesuits, and partook in the sufferings inflicted on the party that was condemned by the bull unigenitus. He was twice imprisoned for the boldness with which he avowed his sentiments. In 1761 he published, "A General History of the Jesuits;" in 4 vols. 12 mo. to which was added a supplement in two others. This was highly censured, and proved to be of considerable use in the
the measures taken against that society. Coudrette died at Paris in 1774, highly respected for his zeal and talents, and additional for the canard which was displayed in his writings. Nouv. Dict. Hist.

COVE, a small creek or bay, where boats and small vessels may ride at anchor, sheltered from the wind and sea.

Cove, or Cove of Cork, a market and port town of the county of Cork, Ireland, situated on the great island facing the entrance of Cork harbour. It was a very wretched place, but it has of late years been much improved. A fine quay has been built and many good houses. The admiral commanding on the Irish station, generally resides there; and a considerable retail trade is carried on to supply the ships in the harbour. There is a small barracks and a fort which commands the only passage for large vessels to the city of Cork. Opposite to this town is the anchorage for men of war, and large vessels; and here very large fleets are often rooed, when collecting for the west India convoy. The islands of Spike and Howl Cowlin, which is nearly opposite to Cove, have been fortified. The works on the former are very considerable. Cove is 131 miles S.W. from Dublin, and seven from Cork. COVEL, John, in Biography, an English divine born at Hornings-page in Suffolk, in 1638, and educated at the grammar-school at Bury. He was admitted into Christ's college Cambridge in 1654, where he took his degrees, and was chosen fellow. In the capacity of chaplain to Sir Daniel Harvey he went out in the embassy to the Ottoman Porte, where he remained seven years. Upon his return he was created doctor in divinity, and was chosen in 1679 lady Margaret's preacher in the University. He advanced by degrees to several honourable and lucrative preferments in the church, and in 1708 obtained the office of vice-chancellor to the University of Cambridge, which he held with much reputation till his death in 1722, having attained to the great age of eighty-four. As an author, his chief work was entitled "Some account of the present Greek Church," &c., for which he collected materials while he was resident at Constantinople. The object of this work was to clear up some difficulties that occurred in the controversy between the celebrated Claude and M. Arnauld, doctor of the Sorbonne. By his contemporaries Dr. Covel was regarded as "a person noted for polite and curious learning, singular humanity and knowledge of the World." Biog. Britan.

COVELLIAE, in Ancient Geography, a town of Vin- delicia, marked in the Peutingerian table.

COVELLIANI Codices, in Biblical History, five MSS. of different parts of the New Testament, brought from the East by John Covell, professor of divinity in the university of Cambridge, which came afterwards into the hands of Harley earl of Oxford, and, with the rest of the Harleian MSS., into the British Museum. They were collated by Mili. The 21st contains the four Gospels; the 22d a manuscript of the Acts, Epistles, and Revelation, written in the year 1087; from several of its very extraordinary readings, it appears to be of no great value — the 3d has the Acts of the Apostles, beginning with chap. i. 11, with all the Epistles, and was suppos'd by Mili to be 500 years old — the 4th contains the Acts and Epistles, written in a modern hand — the 5th, called likewise Sinaitics, because Covell brought it from Mount Sinai, contains the Acts, Epistles, and Revelation; but it has been injur'd, and rendered illegible in many places, by the damp, which has had access to it. It begins with Acts i. 26, and the last lines of the book of Revelation are wanting. The 12th, 20th, and 44th have been examined by Griechacher. COVENSANT, in Law, the content of an agreement of two or more parties by deed in writing, sealed and delivered, to do or omit a direct act; which is a species of express contract, the violation or breach of which is a civil injury. The person who makes the covenant is called the covenantor, and he to whom it is made is the coovenantee.

The remedy for breach of covenant is by a "writ of covenant," which directs the sheriff to command the defendant generally to keep his covenant with the plaintiff (without specifying the nature of the covenant), or shew good cause to the contrary: and if he continues refractory, or the covenant is already broken so that it cannot now be specifically performed, then the infrequent proceedings are forth with precision the covenant, the breach, and the loss which has happened thereby; whereupon the jury will give damages in proportion to the injury suffered by the plaintiff, and occasioned by such breach of the defendant's contract.

A covenant seems to be much the same with a patrim, or covenant, among the civilians.

Covenant is either a Law or a Fact. Covenant in Law, is that which the law intends to be made, though it be not expressed in words: as, if the lessor demits, and grant a tenement to the lessee for a certain term: the law intends a covenant on the lessee's part, that the lessee shall, during the term, quietly enjoy the lease against all lawful incumbrances. 1 Stit., 184.

Covenant in Fact, is that which is expressly agreed between the parties, and inferred in the deed.

There is also a covenant merely personal, and a covenant real. Fitzherbert defines a covenant real to be that whereby a man tis himself to pass a thing real, as lands or tenements, or to levy a fine on lands, &c. Covenant merely personal, is where a man covenants with another by deed to build him a house, or to serve him, &c. &c. N. B. 145. 5 Rep. 10.

The covenant real, to convey or dispulse of lands, seems to be partly of a personal, and partly of a real nature. For this the remedy is by a special writ of covenant, for a specific performance of the contract, concerning certain lands particularly described in the writing. It therefore directs the sheriff to command the defendant, or, called the deforciante, to keep the covenant made between the plaintiff and him concerning the identical lands in question: and it is upon this process that fines of land are usually levied at common law; the plaintiff, or person to whom the fine is levied, bringing a writ of covenant, in which he suzgrel some agreement to have been made between him and the deforciante, touching those particular lands, for the completion of which he brings his action. And for the end of this supposed difference, the fine or finall concordia is made, whereby the deforciante (now called the cognizor) acknowledges the tenements to be the right of the plaintiff, now called the cognizor. And moreover, as leases for years were formerly considered only as contracts or covenants for the enjoyment of the rents and profits, and not as the conveyance of any real interest in the land, the ancient remedy for the lessee, if ejected, was by writ of covenant against the lessor, to recover the term (it in being) and damages, in case the ouster was committed by the lessor himself: or, if the term was expired, or the ouster was committed by a stranger, claiming by an older title, then to recover damages only. No person could at common law take advantage of any covenant or condition, except such as were parties or privies thereto; and, of course, no grantee or assignee of any reversion or rent. To remedy which, and more effectually to secure
COVENANT.

The King's granting the priviljs of the monasteries to any without the statute, 2 Hen. VIII. c. 54, gives the first instance of a revolution (after notice of such assignment) to the crown, and against the particular tenant, by entry or fine, for waste or other forfeitures, non-payment of rent, and neglect of performance of conditions, covenants, and agreements, with a stranger; it might be made and confirmed by statute. In the other hand, for acts agreed to be pardonable, though infamous, except in the case of warranty. Dyer, vol. i. 112.

Covenants are not only personal and real, but they are public, binding to the support of the land or the state, unalterable or collateral to it; and they are affirmative, whereas it is to be performed, or negative: executed, or what we already done, or executed: a covenant binding a person to do something in futuro is for the most part executory (2 Vent. 176. Dyer, 112, 271.) The law does not seem to have appropriated any set form of words, as absolutely necessary to be used in creating a covenant; and therefore it seems that any words, expressing the party's assent to the performance of a future act, will be sufficient for that purpose. A covenant differs from a condition in this respect, that a condition gives entry, and covenant gives an action only. (Owen 54.) A person cannot have action of covenant upon a verbal agreement, for it cannot be proved at writing, except by special cession. (F.N.B. 145.) All covenants between persons must be to do that which is lawful; otherwise, they will not be binding: and if the thing to be done be impossible, the covenant is void. (Dyer 112.)

Covenant to hand, or to use, is when a man that hath a wife, children, brother, sister, or kindred, doth by covenant in writing, under hand and seal, agree that for their or any of their provision or preferment, he and his heirs will hand said land to their use, either in fee simple, fee tail, or for life. The use being created by the statute 27 Hen. VIII. c. 10, which conveyeth the estate as the useasse directed; this covenant to hand, or to use, is becoming a conveyance of the land since the said statute. The considerations of these deeds are, natural affection, marriage, &c. and the law allows in such cases considerations of blood and marriage to raise uses, as well as money and other valuable consideration when a use is to a stranger. Fool. 352.

Covenant, in Ecclesiastical History, denotes a contract or convention agreed to by the Scots, in the year 1638, for maintaining their religion free from innovation. In 1571, the general assembly of Scotland drew up a confession of faith, or national covenant, forming a system of discipline or ecclesiastical polity, and condemning episcopal government, under the name of Hierarchy. In 1588, during the approximation of an invasion by the Spanish armada, a band was framed for the maintenance of true religion, and the defence of the king's person and government, in opposition to all enemies foreign and domestic. This contained a confession of the Protestant faith, a particular renunciation of the errors of papacy, and the most solemn promises, in the name, and through the strength, of God, of adhering to each other in supporting the former, and contending against the latter, to the utmost of their power. The king, the nobles, the clergy, and the people subscribed with equal alacrity. This national covenant in defence of religion was renewed at different times during the reign of James. It was revived with great solemnity, though with considerable alterations, in the year 1648. The subscribers engaged by oath to maintain religion in the same state as it was in 1585, and to reject all innovations introduced since that time. This oath annexed to the confession of faith received the name of the covenant; as those who subscribed it were called Covenanters. In the assembly at Glasgow, which met in 1598, the covenant was ordered to be signed by every one, under pain of excommunication. See Solemn League and Covenant.

Covenant, in Theology, is much used in connection with other terms. Thus, the covenant of grace is that which is made between God and those who believe the Gospel, whereby they declare their submission to him, and he declares his acceptance of them, and favour to them. The C. of G. is sometimes designated a covenant of grace, in opposition to the Mosaic law. The covenant of grace, denoting the promise or grant of favour and blessings to mankind in Jesus Christ, our Lord, was first published to Adam (Gen. iii. 15); nor could it be wholly unknown to the patriarchs; but it was more clearly revealed to Abraham (Gen. xii. 7, xvii. 3, xviii. 10, 15, 18); and hence it has been sometimes called the "Abrahamic covenant."

Covenant of redemption denotes a mutual stipulation, tacit or express, between Christ and the Father, relating to the redemption of sinners by him, previous to any act on Christ's part under the character of Mediator. By this covenant, it is said, Christ undertook to perform those services, to submit to that humiliation, and to endure those sufferings, which were indispensable on his part in the accomplishment of the work assigned him; and the God the Father, on the other hand, stipulated, that he would impart those affinities and encouragements, and bellow those tokens of favour and reward, which were necessary to the ultimate success and honour of Christ's undertaking. See Redemption.

Covenant of works signifies, in the language of some divines, any covenant whereby God requires perfect obedience from his creatures, in such a manner as to make no express provision for the pardon of offences to be committed against the precepts of it, on the repentance of such supposed offenders, but pronounces a sentence of death upon them: such, they say, was the covenant made with Adam in a state of innocence, and that made with Israel at Mount Sinai. It is also alleged, that in far as the light of nature reaches in discovering our duty, we are all born under such a covenant as the former, as by sin to be exposed to death, which may be considered as including not merely the separation of soul and body, and the consequent dissolution of the mortal parts; but likewise such degrees of future punishment as it shall seem to the Supreme Judge righteous and fit to inflict. Hence it has been inferred, that the covenant was made with Adam, not only for himself, but in some measure for his posterity, so that he was to be considered as the great federal head and representative of all who were to descend from him. And it has been suggested that, in consequence of this damage to which Adam's posterity were to become liable by his transgression, they would have received some additional advantages from his continued obedience: such, it may be conceived, though not mentioned in scripture, as would secure the honours of divine justice in the establishment of such a constitution. Accordingly, it has been asserted, that all Adam's posterity would, after his short trial, have been confirmed in a state of immutable happiness.

In order to show that a constitution, such as that which some divines have supposed to be the covenant with Adam, whereby all mankind should become obnoxious to eternal misery for the transgression of one common head, is consistent with divine justice, many have pleaded, that in consequence of such an appointment, we stood to fair a chance for happiness, that if we had then excelled, the proposal had been made to us, we must in reason have been contended to
to put our eternal all on that issue: so that God might reasonably impute that to us as our act, which he knew would have been our act, if we had been consulted on the occasion. But nothing would seem sufficient to vindicate such a proceeding, unless it were to suppose (as an obscure writer has done), that the foes of all the race of Adam were for that moment actually brought into being, and gave personal consent to that covenant, after which they were reduced to a state of insensibility, till the appointed moment came for their animating their respective bodies. See Sale's Koran, c. vii. p. 125. See e. Howe's Works, vol. ii. p. 253, 254. See Full Imputation, and Original Sin.  

Covenant, Solemn League and, was established in the year 1643, at Edinburgh by the persuasion of Sir Henry Vane, and formed a bond of union between Scotland and England. It was sworn and subscribed by many in both nations, who hereby solemnly adjured, and engaged to exterminate popery and prelacy, and combind together for their mutual defence. The subscriber of the covenant vowed also to preserve the reformed religion established in the church of Scotland; but, by the artifice of Vane, no declaration more explicit was made with regard to England and Ireland, than that these kingdoms should be reformed, according to the word of God, and the example of the purest church in the world. It was approved by the parliament and assembly at Westminster, and ratified by the general assembly of Scotland in 1645. King Charles I. disapproved of it when he surrendered himself to the Scots army in 1646: but Charles II. in 1659 declared his approbation both of this and the national covenant by a solemn oath; and in August of the same year, made a farther declaration at Dumfries to the same purpose, which was also renewed on occasion of his coronation at Scone in 1651. The covenant was ratified by parliament in this year, and the subscription of it required by every member, without which the constitution of the parliament was declared null and void. It produced a fence of distractions in the subsequent history of that country, and was voted illegal by parliament, and provision made against it. Stat. 14 Car. II. c. 4. It was ordered by parliament to be burnt by the hands of the common hangman, and the people affiled with great acrimony on the occasion.  

Covenant, Solemn. See See Covenant, Solemn League and.  

COVENT-GARDEN. St. Paul's church in this parish has often been noticed for the boldness and excellence of the carpentry displayed in its roof: which was a few years ago destroyed by a fire that accidentally happened, but has again been rebuilt on its former plan. The Tuscan portico to this church, being reckoned as a model of good architectural taste, we have represented it as a specimen of that order, in Plate XIV. of Architecture.  

COVENTRY, in Geography, a city in Warwickshire, England. It is situated on a gentle eminence, and according to Camden "is set on a low ground, but by evil it somewhat concehadeth." The city having never suffered from fire, still bears strong marks of antiquity in its narrow dark streets, and impeding buildings, some of which almost meet each other from the opposite sides of the way, through the extravagant projection of their different stories. Dugdale and other antiquaries agree in deriving Coventry from Coven or Convent, with the addition of Tri, the British word signifying town; and yet the learned historian of Warwickshire fergus with the word of the river Sherburn that paffles through the city might not have been Cane, and thence Cume-Prie and Coventry. The origin of the place appears to be involved in impenetrable obscurity, but it is certain that the present site is not altogether that of ancient Coventry, which is demonstrated by the discovery of many foundations on the bank, north-west of the city, where there is a place still called St. Nicholas' church yard. The Covent above alluded to is said by John Ros in his MS. charter to have been at one time under the governance of the Abbots of Olbury, but as this legal name's name does not appear in Capgrave's calendar of English Saints, one must reject this part of his assertion and admit that the Covent was burnt in 1247, when Canute and the traitor Edric invaded Mercia and destroyed many towns in Warwickshire; on the ruins thus occasioned, Leofric, earl of Mercia, founded a new monastery in 1243 for an abbess and 24 Benedictine monks, which William of Malmsbury says was afterwards "enriched and beautified with so much gold and silver that the walls seemed too narrow to contain it, insomuch that Robert de Lamerie, bishop of this diocese in the time of King William Rufus, scraped from one beam that supported the former 500 marks of silver." We shall be more particular in noticing the "Priory of Coventry as it is acknowledged to have been of infinite use to the city during its prosperity." Leofric dedicated the church and monastery to the honour of God, the Virgin Mary, St. Peter the Apostle, and the Saints, and presented it with one half of the town of Coventry, and 23 lordships, which gifts were confirmed by King Edward the Confessor, who granted the abbess and monks many valuable privileges afterwards increased by pope Alexander, and the succeeding kings of England. Dugdale speaks of this foundation in his history of Warwickshire as "the chief of all the religious houses in these parts," and as "the only one of Monks in this county." It appears that Leofric had a castle at Coventry, and that he had been instrumental in placing Edward the Confessor on the throne; these facts sufficiently account for the interest he took in the prosperity of the place, and for the influence by which he accomplished his wishes; but if our ancient historians are to be credited, he held the inhabitants in unjustifiable servitude from which they were relieved by the following means. Leofric married the pious and beautiful Godaeva, defended from Thorold, and sister of Thorold, sheriffs of Lincolnshire. This lady moved by the oppressions of her lord's tenants feized on every opportunity to intercede in their favour, till procured by her inaudible importunity, he peevishly offered to grant her requests provided she would consent to ride naked through the town: Dugdale says "in the sight of all the people." Godaeva agreed to this indecent proposal, and continued to accomplish her unpleasant penance, covered by her flowing tresses; and thus obtained a charter of freedom for the grateful citizens who placed portraits of the Earl and Godaeva in one of the south windows of Trinity church about the time of Richard II.; Leofric was represented holding the charter in his right hand with this inscription on it:  

"I. Lanrice, for the love of thee  

Doe make Coventre tall free."  

Some authors assert that Leofric repeating his rash proposal, commanded every person to retire from the streets and the fronts of their houses during the lady's progress, under pain of death, but that one curious person procured a glance which has obtained him the appellation of "Peeping Tom of Coventry," and the honour of a statue looking out of a window in one of the streets of the city: Dr. Pegge, however, produces many arguments to invalidate the whole story. These are inserted in Mr. Gough's edition of Camden's Britannia, to prove that the present annual procession of the inhabitants with a naked figure is founded on historical error.
O_ COVENTRY. 

error. Contrary to subsequent custom, Leofric and Godiva were interred in the two porches of their monastic church, to which the latter gave vast treasures by will. Previous to the conquest, the diocese of Litchfield and Coventry included Chelten; after that event, a synod held at London, by Lanfranc, archbishop of Canterbury, decreed that no episcopal seats should be fixed at inaccessible towns; in consequence there was a transfer from Litchfield to Chelten, and hence through the influence of Robert de Limetey, bishop of this place, he obtained the custody of Leofric's monastery from William Rufus, and the authority of a bull from pope P&chell II. The episcopal seat was again removed from Chelten to Coventry, where the office of abbot became utterly suppressed. The bishop's palace was situated at the north end corner of St. Michael's church-yard, but not a vestige of it now remains; five of Limetey's successors filled themselves priests of Coventry, and the priors of St. Mary's received annuities from parliament. In the reign of King Stephen the monks suffered (in addition to their losses by the peculations of Limetey) the misfortune of having their church and other buildings converted into fortifications, and themselves ejected by Robert Marmion, a powerful chief, then poiffessor of Tamworth castle, in the pregraphs of his hollieties against the earl of Chelten; but they were soon afterwards released from their intruder by the ensuing singular accident. Marmion had surrounded his new fortresses with secret pits to destroy his opponents, but, making a sortie at the head of his garrison, his horse fell with him into one of them in the hurry and confusion of the moment, where he was immediately killed by a soldier belonging to the earl of Chelten's army.

According to an inquisition quoted by Dugdale, taken about the reign of Edward I., this priory had the first voice in electing the bishop of the diocese of Coventry and Litchfield; the prior was lord of the town, holding a moity, with the whole barony, of the king in capite by the service of two knights fees in the army, besides which he held the earl's part; with the former he had a market weekly, and an annual fair of eight days duration, a coroner, and free warren in all his demeine lands, and "being privileged of murder, had gallows, pillory, tumbril, affile of bread and beer; as also fealty of his burghef, and appearances at his court twice in the year." It will appear from this inquisition that Coventry was in a double fenle completely in the power of the priory; as the bishop of the diocese poiffessed the abbacy, all ecclesiastical affairs came under the cognizance of the bishop, the prior, and chapter collectively, and every temporal concern has been shown to have been within their jurisdiction. That the city flourished under their government, may be inferred by the decrease of the population immediately after the dissolution of the priory, 20 Henry VIII., when the annual value was estimated at 731. 196. 5d. John Hales, whose memory is still revered by the citizens, represented to the protector Somerset, that the inhabitants were reduced from 15,000 to 3,000 by the above event, but this statement was incorrect, as the population amounted to 7,000 in 1520, as appears from an exact enumeration taken at that period and recorded in the city leet book. Nothing now remains of this important priory, except some fragments of one of the towers of the church, and a small portion of the cells. The temporal history of Coventry may be traced with tolerable certainy from the reign of King Stephen, when Ranulph, otherwise Gernan, hereditary poiffessor of the manor of Cheyleorton, on the south side of the town, where the castle of the earls was situated, having adopted the cause of the emperour Main, and being re-pulled in an attempt upon Lincoln, retired to his mansion; but, finding it in the king's poiffession, he raised works against it, and, after various conflicts, was driven from it wounded. Ranulph died under sentence of excommunication for some offence committed against Dun- den, bishop of Chelten, and was succeeded by his son, earl Hugh, who, adopting the father's principles, excited the citizens of Coventry to rebel against Henry II. for which that monarch fined them, and deprived them of their privileges; but they recovered the latter after the death of earl Hugh, by paying the king 20 marks. Ranulph, the last earl of the name, granted the citizens their poiffessions in free burgage, and a town-court, where he permitted them to try causes, relative to himself and them, before a person learned in the laws, of their own appointment. This grant was enlarged and confirmed by Henry III., who added a fair for eight days, on the feast of the Holy Trinity, at the earl's request; besides these important advantages they received others of great benefit to the city. The burghers and inhabitants obtained the king's letters patent, 13 Ed. I., authorizing them to take toll of all commodities offered for sale for three years, the produce to be applied in paving the town; but these letters were renewed 20 years after, and from those addressed to the bailiffs, it appears the appointment of that officer had originated between the 13 and 30 of Edw. I. In the reign of Edward III., the burghers and inhabitants procured a patent for six years' toll, the produce to be expended in walling Coventry, to which were added two years more, at the intercession of John of Etham, who then had an estate in reversion in the manor of Cheyleorton, on condition he might be exempted from the expense of erecting the gates. Six years afterwards, they had licence to make conduits throughout the town; and subsequently they purchased an exemption from toll, sewerage, portage, and murage, throughout the kingdom for ten marks. Queen Isabel, poiffessing a life estate in the manor, and influenced by the interest felt in Edward, prince of Wales, duke of Cornwall, and earl of Chelten, prevailed upon Edward III., in the 18th year of his reign, to make Coventry a corporation, to confer of a mayor, bailiffs, &c.; at the same time authorizing them to erect a prison in the queen's portion of the town, for the confinement and punishment of malefactors who were thus placed in their custody. Richard Stoke, mayor, laid the first stone of that wall at the gate, in 1355; but the money raised by toll for this purpose was afterwards augmented by heavy taxes on the啦ly only, to build a wall of stone embattled, for which they had a licence from Edward, the Black Prince, 37 Edward III., who granted the corporation a fee farm of the place. Numerous privileges were bestowed at this period, which enabled the citizens to erect a most admirable enclofure to the town, and many magnificent gates. In the 24th year of Richard II., that monarch visited Coventry, in order to prevent the intended combat between Henry, duke of Hereford, and John, duke of Norfolk; and in 1424, Henry IV. held a parliament there, from which all lawyers or persons learned in the law were expressly excluded: this parliamentum indolitorum was held in the priory. In the preceding reign, several wealthy citizen presented the corporation with mendiages and rents to support the future expenses of that body; but the most valuable gift the place had ever received, was the charter of Henry VI., who erected it into a distinct county, under the title of the county of the city of Coventry. This charter, which contains the offices peculiar to this description of district, was confirmed by Edward IV. Another parliament held there in the reign of Henry VI. was call'd
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ealled Parliamentum diablicum by some of our historians, from the numerous attendants paffed in it. The earl of Warwick afterwards held the city for Henry VI.; and Edward IV., thinking it would be too well defended for speedy reduction, paffed on to London. When the kingdom was recovered to him after the battle of Barnet, and the death of Warwick there, Coventry was discharched; nor did the corporation receive their privileges again, till they had been purchased with 500 marks. Edward IV. visited the city in 1474, with his queen; and Henry VII. slept at the mayor's house, when paffing through the place, subsequent to the battle of Bosworth-field. Great part of the wall, the majority of the 32 towers, and several of the 12 gates of Coventry, were taken down in 1661, as a punishment and disgrace to the citizens for closing the latter against Charles I. Aug. 13, 1642. Previous to the period when Coventry was Garrisoned by parliament, Charles required to refide for some time, and to quarter his forces in the city and neighborhood. This the corporation refused, but offered to receive the monarch only, with many professions of loyalty. Exasperated at the denial, the king attacked and forced open one of the gates with his cannon, but was at length repulsed by the citizens, who remained during the rest of the controll un molested. The eccelical government of this city is denoted to an archdeacon of Coventry; and the city, previous to the reformation, contained, besides the priory, the grey friars, on the south side of the town, the church of which was built in the reign of Edward III., as is evinced by a beautiful octagonal tower and spire yet remaining. The friars to whom it belonged were celebrated for performing sacred mysteries or interludes on moveable flages in different parts of the city. Their pageants amounted to 40, and included the interval between the creation and the last day. These were exhibited on Corpus Chrifti day, to crowds who entered the city from the surrounding neighborhood. The Carmelites, or white friars, were provided with a residence and church at Coventry by Sir John Poultney, who was four times mayor of London, in 1343. The dormitory, refectory, the west gate, and part of the cloisters, are all that remain of this foundation. These are situated at the east end of the city, and now used as a house of industry. Sponce hospital, founded for the reception of the lepers of Coventry, by Hugh, earl of Chester, on the west side of the city, is reduced to the ruins of the chapel and gateway; but Bablake hospital, founded in 1506, by Thomas Bond, mayor, still flourishes. Bond placed 10 poor men, a woman, and a priest, in this hospital, the revenues of which were vested in the city, after its seppation in the reign of Ed. IV., and they now support 18 old men and a nurse. Part of the same building furnishes a residence for a number of boys, who are cloathed in blue, and educated through the juice and benevolence of Thomas Wheatley, mayor, in 1556. Whole servant, sent to Spain by him to purchase some barrels of fleecy goods, brought home, through an unaccountable mistake, a number of caffes filled with ingots of silver and cochinial, which were offered for sale in an open fair as the articles alluded to, and bought as such. This worthy ironmonger and card-maker made every possible effort to obstruct the person who sold them, but without success. He then honourably converted the profits to this charity, to which he added part of his own property. Grey Friars hospital was founded in 1529, by William Ford, merchant, of the staple of this city, augmented by William Pifford, his exector, and subsequently by other benefactions for the reception and maintenance of 14 aged and poor persons, for whom a nurse is also provided. St. John's hospital, in Bishop-street, was founded by Lawrence, prior of Coventry, in the reign of Henry II. This hospital came into the possession of John Hale, in the reign of Henry VIII., who intended to found a college similar to that of Wells in England; but, after various disappointments, was under the necessity of removing from the White Friars church, where he had commenced his operations, to St. John's. Hale left an estate of 43 4 per annum (since greatly improved) to found a free school, held at present in an aisle of the chapel. St. Michael's church originally belonged to the priory, afterwards became a vicarage, and finally came to the crown. The body of this beautiful structure was, in part, rebuilt in 1434. The length of the church is 305 feet, the height of the steeple the same, and the breadth of the church 124. The tower is richly ornamented with niches and canals, and the tower spire rises majestically from an octagon; nor are the exterior and interior less light and elegant. The steeple was built in 1732 by two brothers, William and William Bonner, who expended 1500L. per annum on it for 15 years; and it was completed by two others of the same family who built the middle aisle Trinity church almost as with Sir Michael's in beauty; in which was buried Dr. Philomion Holland, an incomparable translator, school-master, and physician, who left that gave "Candor Britannia" in English. He died in 1636, aged 83. The beautiful cloisters 57 feet high, erected by Sir William Holfis lord mayor of London, between 1541 and 1544, has been entirely removed, after previous gradual mutilation. St. Mary-hall, situated near St. Michael's church, is a magnificent and intercelling structure, principally erected about the time of Henry VI.; the entrance is a rich gate-way, the key-stone to the arch roof of which is sculptured with a representation of the Deity crowning the Virgin, (it being dedicated to St. Mary, and founded by the brethren of St. Mary gild.) The great room has a large window at the north end, containing, in nine divisions, the whole length figures of as many kings of England, with various armorial bearings; and the windows on each side are decorated with the portraits of several eminent persons, members of the Trinity gild, who came into possession of the hall on the union of the gilds. The Drapers' hall, lately rebuilt, is a handsome structure ornamented with Tuscan pilasters. Before the hospitals and free-school of Coventry, there have been several considerable sums given to the citizens, particularly by Sir Thomas White, in trust, for the distribution of the interest in various ways. Coventry was a long time celebrated for its extensive manufacture of cloth, and caps, or bonnets, which it maintained from a period previous to 1546, till the last century. After the latter period, the inhabitants made large quantities of flags, tammies, camblets, lattings, &c.; but these purfuits having declined, the manufacture of silk ribbands was introduced about a hundred years past, which has proved highly beneficial to the city, and is carried on to a vast extent there, and in the neighborhood. Amongst the arts lost at Coventry may be noticed a manufacture of thread, which, before 1591, was rarely practicable for the excellence of the blue with which it was dyed. Coventry polishes the advantage of a canal communicating with London and Liverpool, through the grand junction and grand trunk canals, and Oxford (the Coventry and Oxford canals uniting the two former); it also serves for the conveyance of coal from the neighbouring collieries of Hawkhurst, &c. The city is supplied with water for domestic purposes from a spring near Swanwell, without
the pithy gate, which is held by the corporation. Coventry is situated 39 miles from London, and contains three churches, one quaker, and five other meeting-houses, with a Roman Catholic chapel. The population, as returned under the general survey in 1801, was 16,034, but it is certainly greater, as former calculations led to an estimation exceeding 20,000. Digdale's Warwickshire, Ginger's edit. of Camden, and Pennant's Journey from Chelten to London. The exact situation of the spire of St. Martin's church in this city, was ascertained in the Government Ordnance Survey in the year 1775, by observations from Arbury-hall, distant 92.266 feet; from Epworth, distant 122.62 feet, and bearing 16° 3' 42" S. E. from the parallel to the meridian of Dunmore; and from Broadway beacon, distant 158.205 feet; whence is deduced its latitude 53° 40' 26" 3', and longitude. 1° 30' 5' 5, W. of Greenwich royal observatory.

Coventry stands upon a remarkable stratum of red sandy earth, in some places hardened into stone; to the north-west of this town the coal measures begin to crop out; (see Coal and Collery.) in the park near the town a very felt grey stone is dug, which easily polishes to a fine finish; and is much prized for building purposes, especially in the minor Canon, &c. The ploughed lands near Coventry furnish a great variety and quantity of rounded quartz pebbles, with which the city is paved, some are black, some deep brown, white, and others veined like marble; they run generally from the size of hen's eggs to that of a man's fist. Since the year 1775 this city has enjoyed the benefit of inland navigation. In addition to the particulars of this grand undertaking, given under the article CANAL, we here beg to mention, that the termination of the branch, or principal line as some call it, in the city of Coventry, is upon very high ground at the N.W. end of the town, upon the strong red clay soil, in which all this branch from Longford is cut.

In ascending the steep hill from the deep vale which runs through Coventry, the canal company's house, facing the top of the fleet, presents a very striking and fine object, and the sight of the yards, wharfs, and canal beyond it, is not less gratifying to the curious traveller.

The canal terminates in two parallel branches or banches, forming a spacious yard between them for the flowage and landing of coal and other rough goods, and the canal banches are embanked by narrow wharfs or campheads, raised to such a height above the level of the yards, that carts and waggons when backed up against them have their bottoms level with the camphead, and very nearly so with the gunwales of the loaded boats floating in the banche, by which arrangement the utmost facility is afforded to a vast number of carts and waggons to load with coal, lime, and other goods at the same time, immediately from the barges, either by barrows, or throwing the coals by shovels fall on to the wharf, and then into the carts, &c. and the busy scene is among one of the most gratifying which can well be conceived.

Further north, the eastern bank of the banche is occupied by a range of ware-houses, with roofs projecting over the boats lying in the banches; which can thus be loaded or unloaded in safety in any weather, and at certain intervals gate ways or openings are made from the fleet on the south-east side of the warehouses for carts and waggons, to back up to the camphead as already described, and cranes are contrived to hoist goods out of the banches, and at times deposit them, besides a splendid survey in the year 1775, by which arrangement the utmost facility is afforded to a vast number of carts and waggons, to load with coal, lime, and other goods at the same time, immediately from the barges, either by barrows, or throwing the coals by shovels fall on to the wharf, and then into the carts, &c. and the busy scene is among one of the most gratifying which can well be conceived.

In one of the gate-ways of the company's house, at the entrance to the yard, a weighing engine is fixed for weighing at once the quantity of coal loaded into a cart or waggon, after taking its empty weight, as it passed over the machine in entering the yard; over this is a spacious count-room for the meetings of the canal proprietors, and a full of counting houses and offices for the business of the company and residence of its officers. About one mile from Coventry, on the road towards Nun-eaton, a meadow is watered, whenever circumstances permit, by the waste water discharged over a river on the canal bank, or a trunk through it; a practice which we eariliy wish to see more generally adopted. About 25 miles from Coventry there is an aqueduct and considerable embankment over the SoW river. S. E. of Bedworth, about half a mile, there is an immense deep-cutting and spoil-banks, 12 yards deep in the middle, and 600 yards long through the grand ridge of the island, which here is formed of the red clay stratum before mentioned.

A branch and rail-way proceed from the line at Shackleton's bridge to the coal-pits at Bedworth town, which are 120 yards deep. Sir Roger Newdigate's canal branches from the line on the N.W. of the summit, and rises by several locks, and in its course crosses the summit again before it enters his park. See Newdigate's Canal.

Coventry, a township of America, in the state of Connecticut and county of Tolland, 20 miles E. of Hartford city. It was settled in 1705, being purchased by a number of Hartford gentlemen of one Joshua, an Indian. ALSO, the north-eastermmost township of Kent county in the state of Rhode island: containing 2,417 inhabitants. ALSO, a township in the northern part of New Hampshire, in Grafton county; incorporated in 1754, and containing 50 inhabitants. ALSO, a township in the state of Vermont, and county of Orleans. It lies in the north part of the state, at the south-end of Lake Memphremagog. Black river passes through this town in its course to Memphremagog. ALSO, a township of Chelten county in the state of Pennsylvania.

Coventry, a town of America, in the state of Connecticut; 14 miles N. E. of Norwich.

Coventry Ad, in Law. See Mayhem.

Coventry Bell, in Botany. See Campanula.

Coventry remedy, in Pharmacy, a title given by Mr. Wilmer to a preparation of sponge powder, formed by taking of burnt sponge, powdered, and comminuted, and the three grains, mixing them, and dividing them into 12 powders; and highly celebrated by Mr. W. in febrifugal affections, and particularly in the case of the bronchocele. Mr. W. employed it at Coventry sometimes in its pure state, combined with a sufficient quantity of honey, to form it into a bolus, and sometimes united with calcined cork and parnisea flore.


Ger. Ch. Cal. Peritum top-shaped or funnel-shaped; tube somewhat curved, inflated in the upper part; border with five egg-shaped segments. Cor. Petals several, but not seen by Aublet, having fallen off before he found the plant. Stam. Filaments numerous, united at the bottom by a ring which crowns the entrance of the calyx. Phil. Germ inferior, egg-shaped, flattened at the base so as to appear pedunculate; style filiform, long, curved; stigma acute. Peric. Drupse egg-shaped, with a thick, fibrous, wooly, or coriaceous, much cracked bark; nut thin, brittle; kernel oval-oblong, bitter, two-lobed, covered with a reddish bark.

Ob. This generic character so nearly resembles that of Aublet's.
Aublet's coupi, Acia of Schreber, that La Marec agrees with Schreber in thinking that the two ought to constitute one genus. See Acia, where Aublet's coupi is described.

Sp. A tree about sixty feet high, with a grey smooth bark, and hard, heavy, reddish wood; branches crooked, compounded, spreading wide. Leaves two inches and a half long, alternate, oval, acute, thin, smooth, entire, undulated, petals short, clothed with red hairs. Flowers in bunches at the ends of the branches. A native of the forests of Guiana, about thirty leagues from the sea.

COVER, &c. in Military Language. See Coverture.

Cover of a Bank, in Canal Works, is a term for the area or space of ground, covered by the bate or foot of its banks.

COVERDALE, Miles, in Biography, an English prelate, born in Yorkshire, during the reign of Henry VII., was educated in the religion of the times, and became an Augustinian monk. At the era of the Reformation he became a zealous preacher in its defence. In 1532 he published Tindal's "English Version of the Bible," to which he had given much assistance, and, in 1540, he gave another revised edition of it with notes. See Bible. In 1534, King Edward appointed him to the bishopric of Exeter; from which he was ejected during the reign of Mary, and imprisoned. The king of Denmark interfered in his behalf, and the good bishop was allowed to retire from the walls of a prison to a foreign country. In the next reign he was invited home, and might have been restored to his bishopric, could he have conformed to certain rites and ceremonies which were insisted on by many others, as well as himself, the relics of popery, and unfit to be functioned by their example. As he could not comply with the terms held out, he was neglected, and for a considerable time without any provision. Having suffered from poverty and old age, he was at length noticed by Grindal, bishop of London, who presented him with the living of St. Magnus, London-bridge, where he exercised his ministerial functions, without wearing the offensive habit. He became popular, and was, through the jealousy of his superiors, compelled to relinquish his professional duties, a short time before his death, which was about the year 1557, being something more than 50 years of age. D. Ing. Brit.

COVERED Flask, Fountain, Medals. See Flask, Fountain, Medal.

COVERING, in Architecture, one of the principal parts of a building. See Roofing.

COVERIPATAM, in Geography. See Coverpatam.

COUERON, a town of France, in the department of the Lower Loire, and district of Savenay, seated on the Loire; 21 leagues W. of Nantes.

CO-VERSED Sine, in Trigonometry, a term which some people use for the remaining part of the diameter of a circle, after the verified line is taken from it.

COVERT, in Law.—Feme covert, famina vira co-operatu, denotes a woman married, and to be covered by, or under the protection of, her husband. See Coverture.

Covert-way, in Fortification. See Chemin covert.

Covert-way, Second, called by the French mont chemin covert, is a covert-way at the foot of or beyond the gracht.

Coverture, in Law, is particularly applied to the fitness and condition of a married woman; who, by the laws of our realm, is under covert-baron, or sub patronate viri, and called a feme-covert; and therefore disabled to make bargains with any, to the prejudice of her self, or her husband, without his consent or priuity; or at least without his allowance and confirmation; and if the husband alien the wife's lands, during the marriage, he cannot gainay it during his life.

In law, the husband and wife are considered as one person; and therefore a man cannot grant any thing to his wife, or enter into covenant with her (Co. Litt. 112) for the grant would be to suppute her separate existence; and to covenant with her would be to covenant with himself; hence it is generally true, that all compacts between husband and wife, when fingle, are voided by the intermarriage. (Cro. Car. 55.) A woman, indeed, may be attorney for her husband (F. N. B. 27); for that implies no separation from, but is rather a representation of, her lord. A husband may also bequeath any thing to his wife by will; for that cannot take effect till the coverture is determined by his death. (Co. Litt. 112.) The husband is bound to provide his wife with necessaries by law, as much as himself; and if he contracts debts for them, he is obliged to pay them, (Salk. 118) but for any thing besides necessaries, he is not chargeable. (1 Sid. 120.) Also, if a wife elects, and lives with another man, the husband is not chargeable even for necessaries; (Stra. 647.) at least if the person, who furnishes them is sufficiently apprized of her elopement. (1 Lev. 5.) If the wife be indebted before marriage, the husband is bound afterwards to pay the debt; for he has adopted her and her circumstances together. (Mod. 185.) If the wife be injured in her person or property, she can bring an action for redress without her husband's coverture, and in his name, as well as her own; (Salk. 119) 1 Roll. Abr. 347 neither can she be fixed without making the husband a defendant. (Bro. Cor. 173; 1 Lev. 311; 1 Sid. 120.) This was also the practice in the courts of Athens. There is one case, indeed, in which the wife shall sue and be sued, as a feme sole; viz. where the husband has absconded, the realm, or is banished (Co. Litt. 153;) for he is then dead in law; and the husband, being thus disabled to sue for or defend the wife, it would be very unreasonable if she had no remedy, or could make no defence at all. In criminal prosecutions, it is true, the wife may be indicted and punished separately, (1 Hawk. P. C. 3.) for the union is only a civil union. But in trials of any sort, they are not allowed to be evidence for, or against each other. (2 Hawk. P. C. 431.) However, when the offence is directly against the person of the wife, this rule has been usually dispensed with; and therefore, by statute 3 Hen. VII. c. 3., in case a woman be forcibly taken away, and married, she may be a witness against such her husband, in order to convict him of felony. For in this case she can with no propriety be reckoned his wife; because her consent was wanting to the contract; and, besides, there is another maxim of law, that no man shall take advantage of his own wrong; which the rafter here would do, if forcibly marrying a woman, he could prevent her being a witness, who is perhaps the only witness, to that very fact.

In the civil law the husband and wife are considered as two distinct persons; and may have separate statutes, contracts, debts, and injuries; and therefore, in ecclesiastical courts, a woman may libel and be fixed without her husband. (Cod. 4. 12. 1. 2 Roll. Abr. 292.)

But though our law in general considers man and wife as one person, yet there are some instances in which they are separately considered; as inferior to him, and acting by his commission. Consequently, all deeds executed, and acts done by her, during her coverture, are void; except it be a fine, or the like matter of record, in which case the maid be
Cough be solely and secretly examined, to learn if her act be voluntary. (Litt. § 669, 770.) She cannot by will devile lands to her husband, unless under special circumstances; for at the time of making it, she is supposed to be under his c. (Haw. P. C. 1.) Alto, in some felonies, and other inferior crimes committed by her, through constraint of her husband, the law excuses her; (1 Hawk. P. C. 2.) but this extends not to treason or murder.

By the old law, the husband might give his wife moderate correction. (1 Hawk. P. C. 130.) But this power of correction was confined within reasonable bounds; (Moore, § 847;) and the husband was prohibited from using any violence to his wife, alter quam ad virum, ex causa regissimis et coigliationis moris suis, licet et rationabili pertinet. (F. N. B. 85.) The civil law gave the husband the fame, or a larger authority over his wife; allowing him, for some misdemeanors, iudiciis et fulibus auctor verberare usorem; for others, only modicum coigliationem abdomine. (Nov. 117. c. 14, and Van Leeuwen. in loc.) But with us, in the polite reign of Charles II., this power of correction began to be doubted (1 Sid. 117; 3 Keb. 435;) and a wife may now have security of the peace against her husband (2 Lev. 128.), or, in return, a husband against his wife. (Str. 1207.) Yet the lower rank of people, who were always fond of the old common law, still claim and exert their ancient privilege; and the courts of law will full permit a husband to restrain a wife of her liberty, in case of any gross misbehaviour. (Str. 478, 875.) Blackft. Com. book i.

COUESNON, in Geography, one of the principal rivers of the department of Ille et Vilaine, formerly part of Brittany in France. It runs through Fougeres, and empties itself into Cascade bay, below Pontorfon, on the flat sandy shore of Mont St. Michel. Its course is extremely variable, on which account it was to be rendered navigable in 1804, by collecting its waters at the eait of Mont St. Michel, and embarking its bed between two mole's from Pontorfon, as far as the sea.

COUET, a town of Switzerland, in the bishopric of Bâle; 14 miles S. of Delbrant.

COUF, a town of Asiatic Turkey, in the Arabian Irak; 122 miles S. of Bagdat.

COUGAN, a town of China, of the third rank, in the province of Pe-ch'ieh; 6 leagues N. of Pe.

COUGH, in Medicine, a sudden, violent, and honourous expiration, in a great measure involuntary, and excited by a feafation of the prejudice of some extraneous matter or irritating caufe in the lungs or windpipe.

This feafation of obstruction or irritation, although sometimes perceived in the chest, especially near the pit of the stomach, is most commonly confined to the trachea, or wind-pipe; and especially to its aperture in the throat, which is termed the glottis. Yet this is seldom the seat of the irritating caufe; which is generally situated at some distance from the glottis, and often in parts unconnected in structure, or by proximaity, with the organs of respiration. We have other influences in the animal economy of different irritations being referred, by sympathy, to particular points. Thus the irritation of the urine, dilating the bladder, is chiefly perceived at the external termination of the urethra; at which point, also, a pain is felt, when the bladder is irritated by a stone within it. A view of the various caufes of cough will evince the truth of the above position.

Cough is rather to be considered as a symptom of different morbid states of the vifera, than itself a disease; and hence Dr. Cullen has omitted to arrange it among his genera of diseases. Of the various irritations which give rise to cough, some occur within the cavity of the chest; others are external to that cavity; and some exist even in the vifera of the pelvis.

1. Of those caufes of cough which take place within the thorax, the disorders of the lungs themfelves are the most common; especially the inflammation of the mucous membranes lining the passages, which excites the catarrhal cough, or common cold. See CATARRH. In this cafe, the cough is at first excited by pain and lormens of an inflamed membrane, and is dry; but afterwards, as the inflammation subsides, a thick mucus is poured out, which obturates the respiratory passages, and a cough is excited in order to expel it. The cough is then said to be muft, or accompanied by expectoration. In the chronic catarrh, or the cough and dyspnæa of old people, where, from frequent attacks of cough, there is much relaxation of the membranes in those passages, a copious effuion of mucus takes place into the cells of the lungs, which occasions an almost incessant coughing, by which, and the great impediment to the function of respiration, they are frequently destroyed. See CATARRHUS FENITIS. Another common caufe of cough, which has its seat in the lungs, is inflammation of the pleur'ify, or pleurisy. These diseases, indeed, do not very essentially differ, except in violence and extent, from the acute catarrh; they are more dangerous, and more rapid in their progress, and the constitution is excited to a highly febrile condition. See these articles. Even after the acute state of inflammation may have subsided, a cough, attended with extreme danger, sometimes continues to be excited, by collections of pus, or abcesses, which enfe in the dilubance of the lungs, and terminate either in consumption, or suffocate the patient, by suddenly bursting; more rarely the pus is discharged gradually from a small aperture, and the patient recovers. In such cases, the fever, originally acute, is converted into a hectic, with daily chills, succeeded by heat and flushing of the face, night sweats, and emaciation. Another frequent origin of cough, is the rupture of some of the blood-vessels of the lungs, and the consequent effusion into the cells, of blood, which is expelled by the cough, that its irritation excites, confolating what is technically termed hemoptysia, or effuion of blood. When the vels of the lungs are thus ruptured, they seldom heal readily, but degenerate into ulcers, which pour out a purulent matter; and, by this discharge, the vital powers are gradually worn down and destroyed. This is a common source of consumption, or phthisis pulmonalis. See CONSUMPTION. A cough is excited, and the same fatal disorder is also induced, by the exsudation of tubercles in the lungs; there are little tumours, which gradually increase, and ulcerate, and produce the same confquences as the ulcerations from hemoptysia. Cullen's, or flory concretions, are sometimes formed in the lungs, and the irritation which they produce necessarily excites a cough, which is liable to terminate in consumption. For an ample account of the occurrence of such pulmonary concretions, the reader may consult Morgagni de Sed. et Cauf. Morb. Epit. xv. art. 23. See also Cullen's First Lines, § 893.

There is yet another source of irritation within the lungs, of which cough is an attendant; namely, an effusion of humor into the parenchymatous substance of the lungs, or into the cellular membrane, which connects the cells and blood-vessels together. This has been called phlycten pulmonum, or dropity of the lungs, and is marked by great difficulty of breathing, with a sense of weight and oppression in the chest, occasioned by the compression of the air-cells, and vels, by the accumulated water; hence also great irregularity.
irregularity of pulse, frightful dreams, imperfect sleep, &c. are among its symptoms. It has been suggested by Dr. Darwin, that this form of dropsy may be distinguished from hydrothorax, or dropsy of the chest, in which the water is clotted between the ribs and the lungs, by the circumstance, that the patient is greatly oppressed when he lies on his back, in the matter being, while the change of position in the dropsy of the lungs occasions little or no aggravation of the symptoms; because the water, confined within the cellular structure of the lungs, cannot change its position as in hydrothorax. Edema of the legs often accompanies both of these defects. See Dropsy.

Cough is likewise a symptom arising from other morbid changes, within the cavity of the chest, but external to the lungs. Besides the hydrothorax, or effusion of serum into the face of the pleura, a similar diffusion into the pericardium, or invagination membrane of the heart, produces effects resembling those full enumerated. Inflammation of the pericardium, or of the heart itself, is also accompanied by cough, and other symptoms, not easily to be distinguished from those of pleurisy and pericarditis. And instances are on record, in which a deposition of fat between the laminae of the mediastinum, which separates the two lobes of the lungs, has excited cough, with dyspnoea, &c. and terminated in death.

But although cough is most frequently occasioned by disorders of the organs of respiration themselves, or other morbid changes in the cavity which they occupy: it is, nevertheless, often excited by disorders of parts external to the cavity of the thorax, which affect the respiratory organs, either by the vicinity of their situation, or through some medium of sympathy, which cannot always be traced. In these cases, the cough is generally dry, as much as the irritating cause is external, and not any obstructing matter in the lungs themselves. This, however, is by no means a complete criterion of the seat and nature of the cough; for, in the beginning of catarhal and pneumatic coughs, there is generally no expectoration; as well as in those coughs arising from tubercles, or vomices, before the matter finds an opening into the cells of the lungs.

Disorders of the vetrica of the abdomen, especially of those which lie in contact with the diaphragm, (the muscular curtain, separating the cavities of the belly and chest,) frequently induce a cough. A short dry cough is an invariable symptom of inflammation of the liver, whether acute or chronic, and accompanies the various tubercular and other obstructions in that organ. Hence inflammation of the liver is not unfrequently mistaken for inflammation in the lungs; and in some of the chronic diseases of the liver, we have occasionally found the cough complained of, as the most urgent symptom. The presence of pain in the right side, shooting up to the top of the shoulder, the dryness of the cough, and pain, enlargement, hardens, or uneasiness on pressure, below the ribs of that side, will afford the best means of distinguishing, whether a discharge of the liver is the origin of the cough. Disorders of the stomach are also, often accompanied with a cough of the same dry and teazing nature, especially when that organ is over-distended with food, or is in the opposite condition of emptiness. A short cough is, therefore, a frequent symptom of indigestion, and hypochondriasis, or of that weakness of the stomach, which is popularly termed bilious. In short, there is scarcely a vices, in the cavity of the abdomen, the irritation of which, in a state of disease, has not excited cough. Disorders of the epiglottis, pancreas, and even the kidneys, have all given rise to this symptom; and external tumours, attached to them, have had the same effect. See Morgagni Epit. xix. art. 57, 58, &c. Any distension of the abdomen, which, by its prehure upwards, impedes the descent of the diaphragm, and consequently the expansion of the lungs, occasions cough. Thus, in the aitches, or dropsy of the belly, the water—in tympanites, the air—in corpulency, the fat—in the omentum—&c. in pregnancy, the gravid uteri; all have the effect of exciting cough, in many constitutions.

It is scarcely necessary to mention, that any irritation in the windpipe, will immediately excite cough; whether it be permanent, as catarhal, inflammation, or that of croup; or temporary and accidental, as when a particle of food or drink palls into it. But even irritations in the head, by an unsuffered sympathy, produce a cough. Thus the introduction of the finger into the external meatus of the ear, occasions an uneasy sensation in the windpipe, which is immediately followed by coughing. And cough is not an uncommon symptom of dition in young children; but it may be doubted whether the irritation of the rising teeth in the gums, or of the bowels, which are commonly disordered by dition, be the exciting cause of the cough.

Having enumerated the various circumstances from which cough may originate, and briefly pointed out the most obvious means of distinguishing its seat and cause, it will be unnecessary here to detail the different remedies and modes of treatment which the difference in the nature and origin of the disorders will demand. It is sufficient to have referred the reader to those diseases with which it is connected, and by the cure of which, it will be removed. Before we conclude this article, however, we cannot refrain from pointing out a practical inference of the highest importance, which results from a consideration of the facts here detailed. It is, that we have hence a demonstration of the absurdity and fallacy of those pretensions of empirics, and good lady-doctors, who offer to cure all coughs by the same remedy; regardles, generally ignorant, indeed, of the difference in the origin, seat, and nature of the diseases, of which cough is only a symptom. This inference may be deduced, in fact, from various other symptomatic complaints, such as headache, (see cephalalgia,) hiccough at the stomach, &c.; but is in no innuence more conspicuous than in the disorder of which we now treat. See Sauvage's Nofol. Meth. Cliffs. Ord. I. Gen. 5. Tiff. in Farrow, is a disease to which horses are very subject. Some of these are symptomatic of a consummation, when they have been of long continuance, and are attended with loss of appetite, wasting of flesh, and weakness. Other coughs proceed from phlegm and slimy matter that slits up the vesicles of the lungs: in this case, which is of the athematic kind, the horse's flanks have a quick motion; he breathes quick; his cough is sometimes dry and husky, sometimes moist; before which he wheezes, rattles in the throat, and throws out of his nose and mouth a quantity of white phlegm, especially after drinking, or while he begins or ends his exercise.

These coughs should be distinguished from that thickness of wind, which is occasioned by full or foul feeding, want of exercise, or their being taken up from water's grasp. These are easily cured by proper diet and exercise; and the other disorders may be relieved, and totally cured, if it happens to a young horse, and is not of long continuance, by the following treatment. Bleeding should be used, in proportion to the state of the horse with respect to its health; mercurial medicines are of great service: a mercurial balm, with two drams of calomel may be given at night, and a common purge in the morning; or the following, which is recommended
COU

commanded by Mr. Gibbon: take gum galbanum, ammoniacum, and affa-fecula, of each two drams; fine alises, one ounce; taffrin one dram; oil of aniseed, two drams; oil of amber, one dram; with honey enough to form the whole into a ball. These may be repeated at proper intervals: and during the intervals, and for some time after, one of the following balls may be given every morning: take cinnabar of antimony, finely levigated, six ounces; gum ammoniacum, galbanum, and affa-fecula, of each two ounces; garlic, four ounces; taffrin, half an ounce: let the whole be mixed into a paste with honey. Exacerbit and moderate diet are also essential to the effect of any remedy. In dry coughs, which are the nervous afflammes of horves, moderate bleeding is proper; two drams of colame, mixed with an ounce of espapente, may be given for two nights, and a purging-bail in the morning. This purge may be repeated with one mercurial ball once in eight or ten days; after which, one of the following bails, about the size of a pigeon's eggs, may be taken every day for two months, or longer: take native cinnabar, half a pound; gum guiacum, four ounces; myrrh, and gum ammoniacum, of each two ounces; Venice soap, half a pound; mix the whole with honey, or oxymel of quills. In obinute dry coughs, the following has been found an useful remedy: take gum ammoniacum, quills, and Venice soap, of each four ounces; balsam of sulphur, with affinesce, one ounce; beat them into a mafs, and give them as the former. Young horves are subject to cough in cutting their teeth; bleeding and warm mafhes are generally fufficient for removing this complaint: but in such obj-ects, the cough often proceeds from worms; if this be the cafe, anthelmimte medicines should be given. See Ascarides, and Horse worms.

COUGH, Chin. See Hooping Cough.

COUGH, called the hoak, is a disease to which young bullocks are subject. In this disoder, the wind-pipe and its branches are loaded with small taper worms. Farmers count the diacle incurable; but fumigations with mercurials, as cinnabar, or with ferul, as tobacco, might prove serviceable. Phil. Trans. vol. xiii. part ii. P. 247.

COUGIN-PE, in Geography, a poft of Chinese Tartary: 70 miles S. of Tchahin Souberchau.

COUGOU, the Koubou of Edrit, and said to be called Fiddrei by the natives, is a district in the interior part of Africa; mentioned by Hornemann in his journey; in which, it is said, there is a large lake from four to eight days' journey in circumference, according to the dry or rainy season, and which receives a river from the call. If this report may be credited, and the day's journey be estimated at 20 miles, this lake may perhaps be the real recpecat of the Niter. 

COUGOUAR, in Zoology, the name given by Buffon to the fuma or American lion of Hernandez, the panther of Lawfon, the puma or brown cat of Pennant, and Felix tyger of Gmelin; which fe.

COUGOUR of Pennsylvania, a fpecies of Felis, the body of which is remarkably thin and long. The body, from the neck to the tail, is 5 feet 4 inches long; the tail 2 feet 6 inches; the fore part of the body is 1 feet 9 inches high. It is of a reddith tawny colour above, and whitith on the lower parts of the body. It inhabits the mountains of Pennsylvania, Virginia, Carolina, and Georgia, in North America.

COUGHAGE, or Stinking Beans. These are a kind of kidney beans imported from the East Indies, where they are used as a cure for the dropy. The down growing on the outside of the pod is so painted, as like a little to filmg the flesh, though not with so painful a fenation. This, by a corruption of the word, is called couvage, which fe.

COUGE; in Geography, a small town of France, in the department of Vienne, with 182 inhabitants. It is the chief place of a canton, which reckons 5072 inhabitants, upon a territorial extent of 240 kilometres and 10 communes. Conhe is situated 21 miles S. of Poitiers, on a small river which falls into the Chais.

COVIN, in Law, a deceitful compact, or agreement between two or more, to deceive or prejudice others. As, if a tenant for life, or in tail, confpire with another, that this other shall recover the land which the tenant holds, in prejudice of him in reverfion. Plowd. 346.

Covin is commonly convertart in and about conveyances of land by fine, sefentment, recovery, &c.; and then it tends to defeat purchasers of the lands they purchase, and creditors of their jult debts; and so it is used in deeds of gift of goods: it may be likewise sometimes in futis of law, and judgments had in them. But wherever covin is, it shall never be intended, unless it appears and be particularly found; for covin and fraud, though proved, must nevertheless be found by the jury, or it will not be good. Brownl. 188. Bridgm. 112.

Dr. Skinner takes the word to be a corruption of the Latin conventum, and therefore writes it covin. See Con- spiracy.

COVING, in Building. When houses are built projecting over the ground plot, and the turned projeotive arched with timber, lathed and plastered; the work is called coving.

COVING Carniche. See Carniche.

COVINUS, among the Ancients, a kind of chariot, in which the Gauls and Britons used to fight in battles. This was a terrible instrument of destruction; being armed with sharp fettyhes and hooks for cutting and tearing all who were so unhappy as to come within its reach. This kind of war-choariet was made very fight, and had few or no men in it besides the charioteer; being designed to drive with great force and rapidity, and to do execution chiefly by the hooks and fettyhes. Mela, l. 3. c. 6. Tacit. Vit. Agric. c. 36.

COUKUL, in Ornithology, a name given by Buffon to the eastern black cuckow of Latham, or Coccus orientalis of Gmelin; which fe.—And also to the black Indian cuckow of Edwards, or Coccus ziger of Gmelin; which fe.

COUL, or Cowl, a fort of monkey habit worn by the Bernardines and Benedictines.

The word is formed from coccus, by confounding the two faint syllables into one, as being the same twice repeated.

There are two kinds of couls; the one white, very large, worn in ceremony, and when they afflict at the office; the other black, worn on ordinary occasions, in the streets, &c.

F. Mabillon maintains the coul to be the same thing in its origin with the sooplar. The author of the apology of the emperor Henry IV. distinguishes two forms of couls: the one a gow reaching to the feet, having sleeves, and a capuchin, used in ceremonies; the other a kind of hood to work in, called also a jecuiter, because it only covers the head and shoulders.

COULACISI, in Ornithology, a name given by Buffon to the Philippine Piakeet of Latham, or a variety of the Pittacus galgula of Gmelin; which fe.

COULAM, in Geography, a town of Hindoostan, on the southeren coast, in the country of Tinewaly or Palam- cutta;
COULANGES LA VINEUSE, a small town of France, in the department of the Yonne, 3 miles S. of Auxerre; remarkable for its excellent wine, from whence it derives the name of "Coloia Vinaia." It has 1651 inhabitants, and is the chief place of a canton, which, in 15 communes and on a territorial extent of 157 kilometres and a half, comprises a population of 9855 individuals.

COULANGES SUR YONNE, a small town of France, in the department of the Yonne, 12 miles S. of Coulanges la Vineuse, and 6 miles N. of Clamecy; chief place of a canton, with a population of 1068 individuals. The canton itself has 11 communes and 7334 inhabitants, on a territorial extent of 217 kilometres and a half.

COULANS, a town of France, in the department of the Sarthe; 7 miles from Le Mans.

COULAVAN, in Ornithology, a name given by Buffon to the Orieoolus Chinensis of Gmelin; which see.

COULET, Anne Philibert, in Biography, an engraver, born at Paris in 1718. This fair artist studied under Aliamet, and afterwards under Louis Lemaître, and has done great credit to his instructors. In 1770 he was received member of the Royal Academy at Paris. By her hand we have several landscapes and fac-similes, executed in a very agreeable manner. We shall mention the following: "La Belle Après-dîner," from Vernet, lengthways; "La Partie de Plaisir à la Campagne," from the same; "Les Pecheurs Napolitains," from the same. Huber, Strutt, Heincken.

COULEVRE, in Geography, a town of France, in the department of the Allier; 2 leagues N.E. of Cleriry.

COULIBOUEF, a small town of France, in the department of Calvados, with 405 inhabitants; but the canton, of which it is the chief place, counts 12,555, in 32 communes, on a territorial extent of 187 kilometres and a half.

COULIHAUT, a town of the island of Dominica, on the W. coast; 16 miles S. of Portsmouth. N. lat. 15° 30'. W. long. 61° 20'.

COULNEY, or Fouleny, a river of England, which runs into the Ouse in Yorkshire.

COULMOBIE-LEUSIGNAN, Les, a town of France, in the department of the Vienne, and district of Poitiers. See Leusignan.

COULOMBS, a town of France, in the department of the Eure and Loir.

COULOMMERS, a small town of France, in the department of Charente-Maritime, situated on a fertile plain on the right shore of the great Morin; 15 miles S.E. of Mantes, 20 miles N.E. of Melun, and 40 E. of Paris. It is the chief place of a district, has a sub-prefecture, an inferior court of justice, a registry office, and a population of 5333 individuals. The canton contains 17 communes and 14,606 inhabitants, on a territorial extent of 172 kilometres and a half. Coulommiers has some excellent tan-yards; and its cheeses are reckoned the best of the whole department.

The principal trade of the district is with corn, wine, cheeze, and fish. It contains 4 cantons, 80 communes, and 49,470 inhabitants, on an extent of 952 kilometres and a half.

COULON, or Dalat, a large lake of Chinese Tartary, in the country of the Kalkas. N. lat. 49°. E. long. 116° 54'.

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COULON-CHAUD, in Ornithology, a name given by Buffon to the Turnstone or Sea-Dotterel of some writers, the Hebridal Sandpiper of Penant, the Arenaria of Briphon, and the Tringa interpres of Gmelin; which see.

COULONGE, in Geography, a town of France, in the department of the Aisne, and district of Chateau-Thierry; 4 1/2 leagues N.E. of Chateau-Thierry.

COULONGES, a small town of France, in the department of the Deux-Sèvres; with 1729 inhabitants. The canton, of which it is the chief place, has 14 communes and 11,407 inhabitants, on a territorial extent of 285 kilometres.

COULONHE, a town of France, in the department of the Orne; 7 miles N.E. of Domfront.

COULON, a town of France, in the department of Loiret; 7 miles S.W. of Osen.

COULTER, in Hughenden, that part of a plough which forms the edge, standing before the share of the plough; and cutting the clods as the share tears them up. The coulter is an iron instrument of two feet eight inches in length, near two inches breadth, and near one inch thick. It is driven through the beam of the plough, and fixed in its proper direction by a wedge. See Plough.

The modern improvement of the plough by Mr. Tull, gives it four coulters; the consequence of which is, that the earth ploughed up is cut four times as small as by the common plough, which has only one.

In all coulters, the length and direction are to be nicely regulated. The cutting the hide and driving the wedge, regulate the direction; and its length is altered from the beam, by the driving it farther down, as its point wears away.

None of these coulters ought to descend so low as the share, except when the land is to be ploughed very shallow; it is always sufficient for them to cut through the turf, and let the plough go as deep as it will. In ploughing shallow, the fin of the share must also be broad enough to cut off the thirteenth piece or furrow; else that lying very flat, will be apt to raise up the groundwift, and throw out the plough: but when the land is ploughed deeper, the groundwift will break off this fourth furrow, though the fin be not broad enough to reach it. Tull's Husbandry.

COULTER-neb, or Couter-neb, in Ornithology, a name by which the people in some parts of England call the Anas arctica cluvi. See Anas arctica and Puffin.

COULTSCHIA, in Geography, a town of Afra, in Thibet; 50 miles S.E. of Saramapo.

COUMA, in Botany, (Coumm; Enc.) a tree, more than thirty feet high, and about two in diameter, with a grey thick bark, yielding by incision a large quantity of milky juice, from which it bears into a resin, much resembling ambergris; branches triangular, very compound. Leaves egg-shaped, acute, entire, smooth, of a fine green above, Baker underneath; petals short, channelled. They grow three together from each knot of the branches, and from the central spring two, three, or four buds; and as these lengthen, the lower leaves fall off, forming knots at the place where they have been attached. Flowers unknown. Berries reddish, globular, a little flattened at the summit, growing several together, each on a long peduncle; in the axis of the deciduous leaves. Seeds from three to five, bedded in a brownish pulp. A native of the forests of Guiana and Cayenne. The unripe fruit abunds in an acrid milky juice, which, at length thickens, becomes somewhat chamy,
elammy, and acquires an agreeable taste. It is then brought to market by the negroes, and served up by the Creoles in their dishes.

COUNADENI, in *Ancient Geography*, a people who inhabited the southern part of the isle of Coruca. Prob.


Gen. Ch. Cal Perianth one-leaved, top-shaped, purple, connate, three-leaf: two upper divisions very large, concave; the lower one very short, obtuse. Cor. Petals five, unequal, attached to the lower part of the calyx; three up right, large, marked with violet veins; two inclining, shorter. Stam. Filaments eight, united towards the bottom, attached to the base of the calyx; anthers small, roundish. Pyl. Germ superior, obovate, compressed, enclosed in the tubular part of the flamin; ilave curved; stigma obtuse. Peric. Drupae ovate-oblong, slightly acuminate, pale yellow; rind thin, smooth, thinning; flesh succulent; in small quantity, drying up as the fruit ripens; in the thin and size of the drupe, thick, hard, beet on all sides with short rigid somewhat falcated hairs or bristles, one-angled, valves. Seed robust, much shorter and narrower than the cavity of the stone, obovate, kincterlately compressed, slightly wrinkled, black, thinning, with an aromatic smell, and a taste like that of bitter almonds, but stronger and more pungent.

Sp. C. odorata. A tree from sixty to eighty feet high, about three and a half in diameter, with numerous twilled wide-sparcling branches. Leaves alternate, pinnated; leaflets in two or three pairs, oval-oblong, entire, acuminate, firm, smooth; common petiole about fourteen inches long, ruffet, channelled on the upper side. Flowers: purple-violet, in axillary and terminal racemes. A native of the forests of Guiana. The Creoles put the kernels into their cabinets, to preserve them from insects, and to give them an agreeable smell.

COUNOUR, in *Geography*, a port of Chinese Tartary. N. lat. 40° 58′. E. long. 126° 47′.

COUNA, or COUNA, a town of Portugal, in the province of Estremadura; 2 leagues S.S. of Lisbon.

COUNCIL, or COUSEL, an assembly, or meeting of divers considerable persons, or officers, to consider and concert measures touching the administration of public affairs, rendering justice, or the like.

The king's councils are such as the law assigns him, in order to assist him in the discharge of his duties, the maintenance of his dignity, and the exertion of his prerogative. The first of these is the high court of parliament. See PARLIAMENT. Secondly, the peers of the realm are by their birth hereditary counsellors of the crown, and may be called together by the king to impart their advice in all matters of importance to the realm, either in time of parliament, or, which hath been their principal use, when there is no parliament in being. See PEERS. A third council belonging to the king, according to Sir Edward Coke (1 Inft. 110.), consists of his judges of the courts of law, for law matters. This appears frequently in our statutes, particularly 14 Edw. III. c. 5. and in other books of law. So that when the king's council is mentioned generally, it must be defined, particularized, and understood, "secundum subjectam materiam"; and the subject be of a legal nature, then by the king's counsel is understood his council for matters of law; viz. his judges. Accordingly by the expression of the king's council in 16 Ric. II. c. 5. were understood the king's judges of his courts of justice, the subject-matter being legal; this being the general way of interpreting the word "council." 2 Inft. 125. But the fourth and principal council belonging to the king, is his prory-council, which is generally called, by way of eminence, "the council." See PRIVY COUNCIL.

COUNCIL, AULIC. See AULIC.

COUNCIL, in *Church History and Policy*, a synod or assembly of prelates and doctors, and deputies, met for the regulation of matters, relating to the doctrine or discipline of the church. Molheim observes (E. H. v. i. p. 127.) that the Christian churches, in the early period of their establishment, were entirely independent; none of them being subject to any foreign jurisdiction, but each one governed by its own rules and its own laws. For, though the churches founded by the apostles had this particular deference shown them, that they were consulted in difficult and doubtful cases; yet they had no juridical authority, no sort of supremacy over the others, nor the least right to enact laws for them. Nothing, on the contrary, as he adds, is more evident than the perfect equality that reigned among the primitive churches, nor does there even appear, in the first century, the smallest trace of that association of provincial churches from which councils and metropolitan derive their origin. Although the meeting of the church of Jerusalem, mentioned in the 11th chapter of the Acts, is commonly considered as the first Christian council; yet this notion, as he conceives, arises from a manifest abuse of the word council. That meeting consisted only of one church; and if such a meeting be called a council, it will follow that there were innumerable councils in the primitive times. But every one knows, that a council is an assembly of deputies or commissioners sent from several churches associated in several persons or general body, and therefore the term is inapplicable in the present instance. It has been generally supposed that the deliberations of the council at Jerusalem were juggled and directed by immediate inspiration; but others maintain that this kind of overriding interference would have superceded all reasoning and debates on the subject under consideration, and of course all difference of opinion. Although the members of this assembly conclude their advice to the Gentile Christians about the observance of the Jewish ceremonies, with saying that it seemed good to the Holy Ghost and to us, they probably only meant, as the advocates of the latter opinion allege, that they were fully persuaded that the regulations which they prescribed were proper in themselves, and therefore agreeable to the mind and will of God; being conscious to themselves that they were under no improper bias. When the apostles were dead, it was natural for the bishops of particular churches to assemble on similar occasions; and though they could not have the authority of the apostles, that office becoming extinct with those who were first appointed to it; yet, as there was no higher authority in the church, if they had contended themselves with merely giving advice, and confined their decisions to matters of discipline, they would hardly have been disputed. But it has been pretended, that general councils, consisting of bishops assembled from all parts of the Christian world, succeeded to all the power of the apostles, and have even absolute authority in matters of faith.

During a great part of the second century, as well as the whole of the first, the Christian churches continued independent of each other; inofmuch, that, as Molheim represents them, each Christian assembly was a little state, governed by its own laws, which were either enacted, or at least approved, by the society. But, in process of time, all the Christian churches of a province were formed into
COUNCIL.

One large ecclesiastical body, which, like confederate states, assembled at certain times, in order to deliberate about the common interests of the whole. This institution had its origin among the Greeks, with whom nothing was more common than this confederacy of independent states, and the regular assemblies, which met at fixed times, and were composed of the deputies of each respective state. But these ecclesiastical allocations were not long confined to the Greeks; as soon as their great utility was perceived, they became universal, and were formed in all places where the gospel had been planted. (vid. Tertullian, lib. de Ignavus, cap. 15.) To these assemblies, in which the deputies or commissioners of several churches conferred together, the name of “council” was appropriated by the Greeks, and that of “councils” by the Latins; and the laws that were enacted, in these general meetings, were called “canons,” or rules. (See Canon.) These councils, of which, according to Mosheim, no trace can be found before the middle of the second century, gave a new form to the Christian church; for by them the ancient privileges of the people were considerably diminished, and the power and authority of the bishops greatly augmented. The prelates, at their first appearance in these general councils, acknowledged that they were no more than the delegates of their respective churches, and that they acted in the name, and by the authority, of their people. But the limits of their authority were soon extended, and they converted their influence into dominion, and their counsels into laws; and, at length, openly affected, that Christ had empowered them to prescribe to his people “authoritative rules of faith and manners.” These councils also gradually served to abolish that equality, which subsisted among bishops in the primitive times; because the order and decorum of these assemblies required, that some one of the provincial bishops, met in council, should be invested with a superior degree of authority and power; and hence the rights of metropolitan derive their origin. (See Metropolitan.) Besides, the enlargement of the boundaries of the church, and the custom of holding councils which sprang from it, occasioned the creation of a new order of ecclesiastics, who were appointed in different parts of the world, as heads of the church, and whose office it was to preserve the consciences and union of that immense body, the members of which were so widely dispersed throughout the nation. Such were the nature and office of the patriarchs (see Patriarch); among whom, at length, ambition formed a new dignity, involving the bishop of Rome, and his successors, with the title and authority of prince of the patriarchs. See Bishop, Church, and Pope.

Council, Provincial, is an assembly of the prelates of a province under the metropolitan. In these councils the provincial bishops deliberated together concerning those matters that related to the interests of the churches of a whole province, as also concerning religious controversies, the forms and rules of divine service, and other things of like moment. These lower councils were composed of the ecclesiastical deputies of one or more provinces. See Convocation and Province.

Council, National, is an assembly of the prelates of a nation, under their primate, or patriarch. See Primate.

Council, Oecumenical or General, is an assembly of all the prelates of Christendom, or of commissioners from all the churches in the Christian world, and representing the church universal. Indeed to constitute a general council, it is not required, that all the prelates should be actually present; it is sufficient, that the council be regularly appointed, and that they may be there, or are summoned to attend.

General Councils are frequently called, by ecclesiastical authors, plenary councils. These were established by Constantine the Great, who assembled the first at Nice in 325.

This prince thought it equitable, that questions of superior importance, and such as intimately concerned the interests of Christiannity in general, should be examined and decided in assemblies that represented the whole body of the Christian church; and his judgment in this respect was probably directed by that of the bishops. Indeed there never were any councils held, which could, with strict propriety, be called “universal,” those, however, whose laws and decrees were approved and admitted by the universal church, or the greatest part of the sacred body, are commonly called, however improperly, “oecumenical,” or “general” councils. It is evident that no councils were entitled to this appellation in the strict sense of the term. For the four first, which are held in the highest estimation, had no bishops from several whole provinces in the Christian world; and the council of Trent, to the authority of which the papists pay such great deference, was perhaps the least respectable of all the councils. The chief intention of the crowned heads, who promoted this council, was to reform the abuses in the court of Rome. But the pope himself, by his legates preluding in it, pronounced the protestants, who appeared to it, heretics, before they were condemned by that council; and none were allowed to vote in it, but such as had taken an oath to the pope and the church of Rome. There were scarcely 50 bishops present in it; none being sent from several countries. Some that attended were only titular bishops, created by the pope for that purpose; and some had Grecian titles in order to make an appearance of the Greek church conforming to it. It is also well known, that nothing was decided in the council without the previous consent of the court of Rome, and the decrees concluded with an express fairo of the whole authority of the apostolical see.

Councils were most frequent in the times of the Christian emperors at Constantinople, and of the Christian princes of Europe, from the fall of the Roman empire till towards the end of the 5th century. But the publication of the forged decreals of Lidoare, at that period, produced a great change with respect to councils, the jurisdiction of bishops, and appeals: for councils became less frequent when they could not be held without the pope's leave; and the interruption of provincial councils was a great wound, says Fieri, to ecclesiastical jurisdiction.

The Romanists reckon eighteen general councils: of which only the first four are admitted by the reformed. The number is made out thus: two of Nice, four of Constantinople, one of Ephesus, one of Chalcedon, five of the Lateran, two of Lyons, one of Vienne, one of Florence, and the last of Trent, which held from 1545 to 1563. The council of Trent ordains provincial councils to be held every three years; yet the last held in France is that of Bourdeaux, a hundred years ago.

The first perfon who seems to have maintained the infallibility of councils, is Barlaam; who exhorts one of his friends to return to the communion of the church of Rome, because a council at Lyons, being lawfully assembled, and having condemned the errors of the Greeks, he must then be considered as an heretic, cut off from the church, if he did not submit to it. But Occam, who lived at the same time, says, in the 14th century, speaks of it as the opinion of some doctors only, while others say this infallibility was a privilege of the college of cardinals, and others of the pope himself.
COUNCIL.

It was a question, however, that did not begin to be agi-
tated till that time, and it was then disputed very calmly. It
was more openly debated during the differences between the
papal and the councils; when the councils setting themselves
up above the popes, determined that they, and not the popes,
were appointed by God to judge in the last resort concerning
articles of faith. The council of Constance made no deci-
sion on the subject; but that of Basil did, saying that it was
blasphemy to doubt that the Holy Spirit dictated their resolu-
tions, decrees, and canons; while the pope, and his coun-
cil at Florence, declared the contrary; and it is not yet de-
termined which of these was a lawful council. (see Baronie,
vol. iv. p. 338.) But if we consider the claims of infal-
libility in favour of these councils, we may argue, that
an assembly of bishops, however numerous and respectable,
being only an assembly of fallible men, can have no just pre-
tensions to infallibility; nor, indeed, was this claim arrogated
in early times. If the infallibility of general councils were
admitted, it might be asked, what constitutes a general coun-
 cil? and how shall we know that it is truly universal? For
this, it seems, is a necessary prerequisite to its infallibility.
Were even all the Christian bishops admitted to the council of
Nicae? Were the Novatian bishops admitted there? No,
they were deferred to be shut out as schismatics. But they were orthodox in point of doctrine; and if we cre-
ditate the authors, the ecclesiastical historian, some of them had a plausible claim to admissibility as they wrought miracles. Four hundred bishops met together at Ariminum; did they consti-
tute a general council? No; it was an Arian council; and,
therefore, it must not be called "council," but "congressu-
bum." Besides, those general councils, the decrees of which
were most esteemed and most authoritative, were assemblies,
in too great a degree, of factious men, who determined, not
under the sole influence of a love of truth, but just as the
emperors or the popes, whom summoned them, were pleased
to direct. Whosoever duly considers the various motives by
which the assembled prelates were influenced, will not be dis-
posed to pay a blind deference to the authority of general
councils, and will rather be inclined to judge that the coun-
cil held by the apostles at Jerusalem was the first and the last
in which the Holy Spirit may be affirmed to have presided.
"Thus far we may safely go," says the excellent Dr. Jor-
tin (Rem. on E. H. vol. iii. p. 57.) "and submit to an apop-
tolical synod: but if once we proceed one step beyond this,
we go we knon not whither. If we admit the infallibility of
one general council, why not of another? And where
shall we stop? At the first Nicaean council, A. D. 325, or
at the second Nicaean council, A. D. 787?" Although
Arianism was condemned by the council of Nicae, it was again
established at the council of Ariminum, which was as much
a general council as the other, and also in the councils of
Selucia and Sirmium. We have also a remarkable instance
of the mutual contradictions of councils. at which the popes
themselves have professed, in those of Chalcedon and Con-
tantinople, in 554. For the former abjured and justified Theo-
doret of Cyr, and left of Eileffia, and received them into
their body, as orthodox bishops; whereas the council of Con-
tantinopel e, which is styled the fifth general council, and
was approved by the pope, condemned them as damnable heres-
ies. The council of Constantinople also decreed that im-
ages were not to be endured in Christian churches, whereas
the second council of Nicae not only allowed them to be erect-
ed, but even to be worshipped. In later times, the Lateran
council of Julius II. was called for no other purpose but to
relinquish the decrees of the council of Pisa, and whereas
the council of Basil had decreed that a council of bishops is
above the popes, the Lateran council, under pope Leo,
decided that a pope is above a council. "They who difclaim
private judgment," says Dr. Jortin (ubi supra,) "and believe
the infallibility of the church, act consistently in holding
the infallibility of councils; but they who take their faith
from the Scriptures, and not from the church, should be
careful not to require nor to yield too much regard to such
assemblies, how numerous soever. Numbers in this cafe go
for little, and to them the old proverb may be applied.
"Et turba nemper argumentum pellit."

A general council, however, we are told, will at least
be secured from error in fundamentul; to which the same
writer replies, that "by this way of reasoning the number of
fundamentals will be increased beyond measure and with-
out end; and metaphorical terms of art will be fettered fund-
damental doctrines" as if the very essence of Christiani-
ity could depend upon words not used by the Holy Spirit,
unknown to the sacred writers, not to be found in the records
of the three first centuries, of which different interpretations
were given when they were first established, and have been
given ever since, and which common people most certainly
do not and cannot understand; but they are secured, it seems,
by that sort of faith without knowledge, which the church
of Rome recommends, and which is called by some "sides
carbonaria."

After all, we may observe, that the most eminent catholic
writers themselves have maintained different opinions on this
subject, and have been much influenced by the circumstances
in which they wrote. This was very remarkably the case
with Zeno Sylvius, who had with great boldness maintained
the authority of the council of Basil against Eugenius IV.;
but being made pope (by the name of Pius II.) he publish-
ed a solemn recantation of all that he had written upon that
subject, declaring without shame or hesitation, that as
Zeno Sylvius he was a damnable heretic, but as Pius II.
he was an orthodox pontiff. At present the opinion of the
infallibility of the pope being generally given up by the
catholics, they foppoe the fact of infallibility (which must
exist somewhere) to be in the councils. The protestants
themselves had at one time no dispute about the authority
of truly general councils. Luther appealed to a general
council regularly assembled, and engaged to abide by its
decision. Calvin maintained in express terms, that the uni-
versal church is infallible, and that God must annul his solemn
promises if it be otherwise (Bunfage, vol. iii. p. 499.) See
also bishop Bull's Def. Fid. Nic. infra. Amidst protestants, at this advanced period of general illu-
mination and liberty, no one will acribe to any assembly of
men, however dignified or numerous, the privilege of infal-
libity; nor will any one vindi cate the imposition of cred-
dulity, which have frequently originated in this source.

There have been various collections of the canons or de-
crees of councils; as that of Dr. Merlin at Paris in 1324;
one of F. Crabbe, a Franciscan, in 1535; another of Su-
rius, in 1567; another at Venice, in 1587; another at
Rome, in 1608; one of Einus, canon of Cologne, in 1606,
in ten volumes; another at the Louvre, in 1644, in thirty-
seven volumes; another of F. Labeo and F. Collart, Jefuits,
in 1672, in seventeen volumes, more ample than the rest;
lastly, another by F. Hardouin. See CAIRN.

COUNCIL OF THE INDIES. constitutes a tribunal, of very emi-
nent dignity and extensive power, in which is vested the fu-
prime government of all the Spanish dominions in America.
It was first established by Ferdinand in the year 1511, and
brought into a more perfect form by Charles V. in the year
1524. The jurisdiction extends to every department, eccle-
siastical, civic, military, and commercial. All laws and or-
dinances relative to the government and police of the colo-
tries
cies originate there, and must be approved of by two-thirds of the members, before they are issued in the name of the king. All the offices, of which the nomination is referred to the crown, are conferred on this council; and to it each person employed in America, from the viceroy downwards, is accountable. It reviews their conduct, rewards their services, and inflicts the punishments due to their malversations. Before this tribunal is laid whatever intelligence, either public or secret, is received from America, and every scheme of improving the administration. From the first institution of the council of the Indies, it has been the constant object of the catholic monarchs to maintain its authority, and to make such additions from time to time, both to its power and its splendour, as may serve to render it formidable to all their subjects in the New World. Whatever degree of public order and virtue still remains in that country, where to many circumstances confine to relax the former, and to corrupt the latter, may be ascribed in a great measure to the wise regulations and vigilant inspection of this respectable tribunal. Robertson's America, vol. iii.

COUNCIL of war, is an assembly of the principal officers of an army, or fleet, occasionally called by the general, or admiral, of each country, or of the present state of things, and concert measures for their conduct, with regard to sieges, retreats, engagements, &c.

The same term is sometimes also used for an assembly of the officers of a regiment or ship; met to try soldiers or sailors accused of any crime.

Council, Common. See Mayor's Courts.

Council and Session in Scotland. See Sessions.

COUNSEL, COUNSELOR, Conflitarius, in Law; is a person retained by a client to plead his cause in a court of judicature.

Of counsellors there are two species or degrees; viz. barristers and fejeants; which fee respectively. From both these degrees some are usually selected to be his Majesty's counsel, learned in the law; the two principal of whom are called his attorney, and solicitor, general. The first king's counsel, under the degree of fejeant, was sir Francis Bacon, who was made fo "honoris causa," without either patent or fee; so that the first of the modern order (who are now the sworn servants of the crown, with a standing salary), seems to have been sir Francis North, afterwards lord-keeper of the great seal to king Charles I. The first king's counsel answer in some measure to the advocates of the crown, "advocati fisci," among the Romans. For they must not be employed in any cause against the crown without special licence; in which respect they agree with the advocates of the file (Cod. 2. 9. 1.); but in the imperial law the prohibition was carried further, and perhaps was more for the dignity of the sovereign; for, excepting some peculiar cases, the fiscal advocates were not permitted to be at all concerned in private suits between subject and subject. (Cod. 2. 7. 13.)

A custom has of late years prevailed of granting letters of patent of precedence to such barristers as the crown thinks proper to honour with that mark of distinction; whereby they are entitled to such rank and precedence as are affiliated in their respective patents; sometimes next after the king's attorney general, but usually next after his majesty's counsel then being. These, as well as the queen's attorney and solicitor general, rank promiscuously with the king's counsel; and, together with them, sit within the bar of the respective courts, but receive no salaries, and are not sworn; and therefore are at liberty to be retained in causes against the crown. And all other fejeants and barristers indiscriminately (except in the court of common pleas, where only fejeants are admitted), may take upon them the protection and defence of any suitors, whether plaintiff or defendant. See CLIENT. As pre-attendance in the courts is reckoned of so much consequence, we shall here subjoin the order of precedence, which usually obtains among the practitioners:

1. The king's sejeant, to be constituted by special patent:
2. The king's ancient sejeant, or the eldest among the king's sejeants;
3. The king's advocate general:
4. The king's attorney general:
5. The king's solicitor general:
6. The king's sejeants:
7. The king's counsel, with the queen's attorney and solicitor;
8. Serjeants at law:
9. The recorder of London:
10. Advocates of the civil law:

In the court of exchequer two of the most experienced barristers, called the gab-man, and the tab-man, from the places in which they sit, have also a precedence in motions. A counsellor at law hath a privilege to enforce any thing which is informed by his client, if pertinent to the matter, and is not to examine whether it be true or false; for it is at the peril of him who informs him. C. In. 90. And by fl. 5 Eliz. c. 14. counsellors shall not be punished for shewing a false deed in evidence. But after the court hath delivered their opinions of the matter in law depending before them, the counsel at the bar are not to urge any thing farther in that cause. 1 Litt. Abr. 355.

A counsel is allowed a prisoner upon a general issue, on indictment of felony, &c. unless some doubtful point of law arise; the court is the prisoner's only counsel; and the behaviour of the prisoner in his own defence, is one means of discovering the truth: but this seems to be a defect in our common law; which strictness is, in this respect, no part of our ancient law; for the Mirror (c. iii. § 1.), having observed the necessity of counsel in civil suits, immediately joins, that the necessity is greater in defence upon indictments and appeals of felony, than upon other venial causes. The judges themselves are so sensible of this defect, that they never suffer to allow a prisoner counsel to instruct him what questions to ask, or even to ask questions for him, with respect to matters of fact; for, as to matters of law, arising on the trial, they are entitled to the assistance of counsel. Provision is made by fl. 7 W. III 3. and by fl. 20 Geo. II. c. 30. for counsel for prisoners in treason. See TREASON. Blackett, Com. vol. iv. See TRIAL.

COUNSELLORS of the king, hereditary. See COUNCIL and PEERS.

COUNSELLORS of honour. See HONOUR.

COUNSELLORS, Privy. See PRIVY-COUNCIL.

COUNCIL, COUNTER, COMES, a nobleman who possesseth a domain erected into a COUNTY; which fee. See also VISCOUNT.

English counts we distinguish by the title of earls; foreign ones all retain their proper name.

The dignity of a count is a medium between that of a duke and a baron.

According to modern use, many plenipotentiaries and ambassadors have assumed the title of counts; though they have no county; as the count d'Arques, &c.

Anciently, all generals, counsellors, judges, and secretaries of cities under Charlemagne were called counts; the distinguishing character of a duke and count being this, that the latter had but one town under him, but the former several.

A count has a right to bear on his arms a coronet, adorned with three precious stones, and surmounted with three large pearls, whereof those in the middle and extremities of the coronet advance above the rest.

Counts were originally lords of the court, or of the emperor's retinue, and had their name comites, à comitando, or à commandando; hence, those who were always in the palace at the emperor's side, were called comites palatini, or -
COUNT.

In the times of the commonwealth, the emperors, among the Romans, was a general name for all those who accompanied the proconsuls and proprietors into the provinces. There were four counts: the first bore the title of illustrius, the second that of clarissimi, and afterwards factores; the third were called prefidentes.

Of the two first classes was the senate composed; those of the third class had no place in the senate, but enjoyed several other of the privileges of senators.

There were counts who served on land, others at sea; some in a civil, some in a religious, and some in a legal capacity: as, "comes arius, comes facrarum latioinitionum, comes facri consistorii, comes curiae, comes capelle, comes archiatarorum, comes commerciorum, comes villarum, comes horrarum, comes opiniorum or annone, comes domi tocorum, comes equorum regionum or comes flabuli, comes domorum, comes excurbitorum, comes notariorum, comes legum or praefector in iure, comes limitum or marcarum, comes purcis Romanis, comes patrimonii, &c."

Among those on whom Constantine conferred the rank of "illustrius," we may mention the "count of the camp," count caerufus, to whom was committed the principal administration of public affairs. He was the supreme magistrate of the palace, inspected the discipline of the civil and military schools, and received appeals from all parts of the empire; the caufes which related to that numerous army of privileged persons, who, as the servants of the court, had obtained, for themselves and families, a right to decline the authority of the ordinary judges. Another officer belonging to the same class was the treasurer general of the revenue, denominated "count of the sacred largesses," probably to inculcate the notion, that every payment flowed from the voluntary bounty of the monarch. Twenty-five provincial receivers, of whom eighteen were honoured with the title of count, corresponded with the treasurer. The imperial estates, independently of the public revenue, were under the administration of another officer, called the "count" or treasurer of "the private estate." Moreover, the chosen bands of cavalry and infantry, which guarded the person of the emperor, were under the immediate command of the "two counts of the domestics." The whole number consisted of 35,000 men, divided into seven schools, or troops, of 500 each; and in the cauf, this honourable service was almost entirely appropriated to the Armenians. These counts of the domestics had succeeded to the office of the Praetorian prefects; like the prefects, they aspire from the service of the palace to the command of armies.

The Franks, Germans, &c. passing into Gaul and Germany, did not abolish the form of the Roman government; and as the governors of cities and provinces were called counts, Comes, and dukes, ducatis, they continued to be called so.

The counts of cities were beneath the counts and dukes and counts who presided over provinces; the first being constituted in the particular cities under the jurisdicton of the latter. The counts of provinces were in nothing inferior to dukes, who
who themselves were only governors of provinces. Under the lat of the second race of French kings, they got their dignity rendered hereditary; and even usurped the sovereignty when Hugh Capet came to the crown: his authority was not sufficient to oppose their encroachments: and hence it is that they enjoyed the privilege of wearing corsets in their arms; they assumed it then, as enjoying the rights of sovereigns in their particular counties, or duchies. But, by degrees, most of the counties became reunited to the crown.

We learn from Tacitus, that the chief men among the Germans endeavoured to attach to their persons and interests certain adherents, whom he calls "comites." These fought under their standard, and followed them in all their enterprises. The same custom continued among them in their new settlements, and these attached or devoted followers were called "sides," "antrulliones," "homenes in trutine Dominica," and "lenda." Tacitus informs us (De Mor. Germ. c. 13.) that the rank of a "comit" was deemed honourable; and the composition paid for the murder of one in "trutine dominica" was triple to that paid for the murder of a freeman. While the Germans remained in their own country, they courted the favour of these "comites" by presents of arms and horses, and by hospitality. As long as they had no property in land, these were the only gifts which they could bestow, and the only reward which their followers desired. But upon their settling in the countries in which they conquered, and when the value of property came to be understood among them, instead of these flight presents, the kings and chief men bestowed a more substantial recompense in land on their adherents. These grants were called "beneficia," because they were gratuitous donations; and "honores," because they were regarded as marks of distinction. See Beneficium.

The quality of count is now become very different from what it was ancienly; being now no more than a title, which a king grants upon erecting a territory into a county, with a reserve of jurisdiction and sovereignty to himself.

At first, there was no clause in the patent of creation, intimating the reversion of the county to the crown in default of heirs male; but Charles IX., to prevent their being too numerous, ordained that duchies and counties, in default of heirs male, should return to the crown.

The point of precedence between counts and marquises has been formerly much controverted; though anciently, when counts were governors of provinces, they were on a level even with dukes.

William the Conqueror, as is observed by Camden, gave the dignity of counts in fee to his nobles; annexing it to this or that county or province, and allotting for their maintenance a certain proportion of money, arising from the prince's profits in the pleadings and forfeitures of the provinces. To this purpose he quotes an ancient record, thus, "Hen. II. Rex Anglie his verbis comitem creavit: sciant nos fecisse Hugnonem Bucrot comitem de Norf. &c. de tertio demarii de Norwich & Norfolke, fuit aliquis comes Angliae, &c."

The Germans call a count, graaff, or graffe; which, according to a modern critic, properly signifies judge; and is derived from grauio, or graffo, of sceafiz, I write. They have several kinds of these counts, or graffo; an haldgrave, marchgrave, burggrave, and palggrave, or counts-palatin. These last are of two kinds; the former are of the number of princes, and have the investiture of a palatinate; the others have only the title of count palatine, without the investiture of any palatinate.

Some affart, that by publicly professing the imperial laws for twenty years, the person acquires the dignity of a count palatine; and there are instances of professors in law, who have assumed the title accordingly; but there are others who quash this right.

Counts of Britain, "comites Britanniarum," officers who commanded the Roman forces in the interior parts of Britain, distributed into the towns, forts, and castles in these parts. The forces under the counts of Britain are supposed to have been originally about 3000 foot and 600 horse, but after the internal tranquility of the country was fully secured, these forces seem to have been removed out of the island, or to have been stationed on the frontiers; for in the 53d section of the "Notitia Imperii," where the court of this count is described, no notice is taken of any forces under his command.

Count of the Saxen shore in Britain, "comites Saxoniex per Britanniam," an officer who commanded in chief all the forts and garrisons, established along the south and east coasts of Britain, in order to protect the country from the depredations of the Saxen pirates, who infested these coasts. Of these there were nine in the following order, beginning at the most northerly, and advancing southwards: viz. 1. Brandunum, or Brancalier. 2. Garinonum, Burghcastle, near Yarmouth; both on the Norfolk coast. 3. Othons, Christchurch, not far from Malden in Essex; now overflowed by the sea. 4. Regulbium, Richborough. 5. Rutupia, Dover; 7. Lenones, Lime, these four last on the coast of Kent; 8. Anderida, Hadleigh, or East-Bourn, in Suffolk; and 9. Portus Adurnum, Portsmouth, in Hampshire. These 9 garrisons were garrisoned by about 2200 foot, and 200 horse. The enigns of the count of the Saxen shore in Britain were, a book of instructions, and the figures of 9 cabbles, representing the 9 garrisons under his command. The court of this count was composed of the following officers: viz. A principal officer from the court of the master of the foot, two auditors and a master of the prisons, both from the same court; a secretary; an affiant; an under-affiant; a registrar; clerks of appeals; serjeants; and other under-officers.

Count, in Law, denotes the original declaration of complaint in a real action; as the declaration is in a personal one: the libel of the civilians answers to both.

Yet count and declaration are sometimes confounded; and used for each other: as, count in debt, count in appeal, &c. See Declaration.

Count-wheel, in Clock-work, a wheel which moves round in twelve hours; called also the locking-wheel. See Clock.

Countee, Fr. Comte, denoted the most eminent dignity of a subject, before the conquest; to that title, who in ancient times were created "counts," were men of great estate; for which reason, and because the law intends that they assist the king with their counsel for the public good, and preserve the realm by their valor, they had great privileges; as that they might not be arrested for debt or trespass, or be put upon juries, &c. Of old the countee was prefetti, or profetti comites, and had the charge and custody of the county (which fee); but this authority now belongs to the sheriff. 9 Rep. 46. A countee or count is in the law French, an earl. See Earl.

COUNTENANCE, seems to have been used for credit or estimation; Old Nat. Brev. III. and flat. 1 Ed. III. c. 4. See Contenement.

COUNTER, from computare, is the name of two prisons in
in London, for the use of the city, to confine debtors, breakers of the peace, &c.

**Counter.** Among Engineers, is a term often used for the overseer upon canals and other great works, whose business it is to count the men employed at different times of the day, and keep an account of the time and number of labourers' days-work, spent on different departments of the work, both as a check upon the charges of such men as are paid by the day, and as a rule for the sums which contractors for large pieces of work, are to be allowed to draw, on account, for paying their men: this information is also of the most essential use in forming the resident engineer's judgment on the time necessary for performing any future piece of work, and the proper prices to be allowed for works of different kinds, as observed under the article Canal, which fee.

Counters, in Ship-Building, are distinguished into upper and lower. The upper counter is reckoned from the galley to the lower part of the figure of the stern. The lower counter is between the transom and lower part of the gallery.

**Counter of a bronc,** that part of a horse's fore hand which lies between the shoulders and under the neck.

**Counters, Fr. Jettons,** from jetter, to cast, in the History of Coinsage, are pieces of coin issuing from modern mints that frequently occur: they are small, and very thin, commonly of copper or brass, but sometimes of silver, and even of gold. The intention of the common counters, as their name imports, was merely for calculation. This was performed by means of a board marked with parallel lines. (See Abacus.) Pieces of this kind were most commonly used in abbey and other places, where the revenue was complex and difficult of adjustment. For this reason, a great number of them is found in the ruins of our English abbey, whence they are commonly called "Abbey-pieces." But almost all of them are coined abroad, from the 14th century down to the present times; though some few have been likewise struck in England, from the time of Henry VIII. downwards. Most of the gold and silver counters are within the last century, and struck in France. They are readily known from the arms of the companies on them, and from other marks, so that it is needful to give any particular account of them. The English "touch-pieces" may be clasped with silver counters; they commonly bear on one side St. Michael and the dragon, and a ship on the other; and they were designed to be hung round the neck when the king touched the party for the evil; the latest are of James II., Anne, and the Pretender. The ancient copper counters are the most likely to impose upon the younger amateurs in the science of medals; who may be so imposed upon as to pay for them as coins, though they are not worth a penny a piece. Mr. Snelling has, in his treatise, given plates of them of all ages; in which it will be seen, that the most ancient have croissės with pellets on both sides, and similar devices; the next, globes surmounted by croissés, &c.; and the most modern, portraits of princes and dates, with the arms of the kingsons on the reverse. Besides, they are easily distinguished by their thistles, which degrades them from all other coins; for, as medals are superior to coin, so counters of all kinds are inferior. The ancient ones cannot impose on any person; for copper was coined for currency in France, and other countries where they are principally struck, till about the year 1750; and brass never was common coin of any state in modern times. The modern counters have almost always a legenda in Latin, French, or Flemish, which marks their intention; being so many maxims of justice in accoupts.

The ancients had counters of the small brass sort, that were struck for their domestic games; e.g. that with four dyes, **qui ludest Arkan det quod Satie sit,** and the like: a brass, bears Pinkerton, that has hitherto totally escaped our medalists. In this connection we may mention the "Nummi breviat," (see Brachiated) a species of the early modern coins between counters and money. They are small thin plate, commonly of silver, stamped with wooden dies, as it should seem, upon one side only, with the rude impression of various figures and inscriptions. Most of them are ecclesiastical, as appears from the crofs, &c. being struck by the archbishops, bishops, and abbots, in Germany, Switzerland, Denmark, Sweden, Norway, and a few in Poland. But some also occur of secular princes and states. Sperlingius has published a curious treatise on the origin and progress of brachiated coins, (Lubec. 1700, 4to.) from which it appears that the oldest are of Hym the Lion, duke of Saxony, 1180; and it is certain they were unknown in Germany till that century. There are several brachiated coins of the counts of Thuringia, bearing their figures on horse-back, with legends of name and title. The Byzantine base silver, in the form of a cup, with figures only on the concave side, seems to have given rise to the German brachiated coins. And they continued to be used in Germany till the end of the 15th century; and in some parts of Switzerland they are used even now; though at Zurich they ceased about the year 1400. There are many of bishops in Denmark, as of Bremen, 1370, and others; as there are of Swedish bishops; and of Norwegian, which last bear NI for Nidaros, now Dramtheim, the archiepiscopal fee. Some opulent trading towns in Norway also appear to have struck them; and A occurs for Akers, or Opdala, and B for Bergen, as Sperling explains them. Those of German cities and states, are mostly known by the arms. Pinkerton's Eff. on Medals, vol. ii.

**Counter,** of the Latin preposition contra, again, is used in the composition of divers words in our language; and generally implies the relation of opposition, as.

**Counter-Alley,** in Gardening. See Alley.

**Counter-Approach.** Line of counter-approach, is a fort of trench, which the besieged make from their covert-way to the right and the left of the attacks, in order to be able to enflade the enemy's works. This line should take its commencement, or begin, in the angle of the place of arms of the ravelin, that is not attacked, and of the ballion attacked, at the distance of 50 or 60 toises from the attacks; and ought to be prolonged, or carried on as far as may be judged necessary for feizing the enemy in his trenches and parapets. This h-e or trench, ought to be completely commanded, and seen directly from the covert-way and ravelin, to prevent the besiegers, should they drive the troops out of it, to derive any benefit or advantage from it.

There should be placed on each side of the opening of this line of counter-approach, small pieces of artillery, and in the demi-lane, or ravelin directly opposite to the said opening, some large cannon to scour and look along it, should the enemy wish to establish himself in it after drawing the besieged out of it.

The enemy will either endeavour to cover himself against this line of counter-approach, or he will put on a line to join it, expecting to render it useless. But such a line, if he makes it, will render his cavalry of but little use against the felies of the besieged. Besides, another line of counter-approach more distant from the attacks, and more extended will produce the same effect with the first, and will render the first useful for the purpose it was intended for, before
COUNTER-Change, in Commerce, a mutual exchange between two parties. See Exchange.

COUNTER-Charge, in Heraldry, is when there is a mutual changing of the colours of the field and charge in an escutcheon, by means of one or more lines of partition. Thus, the coat of the celebrated Chancer, is "Party per pale argent and gules a bend counter-changed," that is, that part of the bend which is on that side of the escutcheon which is argent is gules; and that part of it which is on the other is argent.

COUNTER-Charge, is a reciprocal charge, or recrimination, brought against an accuser. See Recrimination.

COUNTER-Charm, a charm, or spell, contrived to hinder the effect of another. See Ligature.

COUNTER-Cherutree, in Heraldry, denotes a field divided chevronways, and is now more frequently termed per Chevron.

COUNTER-Coloured. See COUNTER-Bands.

COUNTER-Composed. See Composed.

COUNTER-Deeds, a secret writing, or a private act, either before a notary, or under a privy-seal; which destroys charges, annuls, or alters, some more solemn and public acts. Counter-deeds are rather tolerated than permitted; in many cases they are actually prohibited; as being usually no better than frauds. The custom of Paris annuls all counter-deeds, contrary to the tenor of a marriage.

COUNTER-Dracon is a ditch or channel, parallel to a canal or embanked water-course, for collecting the foliage water, or for conveying any brook or stream of water by the side of the canal or embankment, to a culvert or arch under the canal, by which it is to be conveyed away to lower ground.

COUNTER-Drawings, in Painting, &c., the copying of a design or painting, by means of a fine linen cloth, an oiled paper, or other transparent matter; whereas the strokes appearing through, are followed and traced with a pencil, with or without colour.

Sometimes they counter-draw on glasses, and with frames or nets divided into squares, with silk; or with thread; and also by means of instruments invented for the purpose, as the parallelogram. See Designing.

COUNTER-Embattled, in Heraldry. When an ordinary is embattled-counter-embattled, the indents on the upper edge must answer the projections on the under.

COUNTER-Ermined, is the reverse of ermine, being a black field with white spots; and is now generally termed Ermine. See Ermine.

COUNTER-Extension, in Surgery, is the act of stretching or drawing a limb in a direction contrary to that which is required for its reduction, when fractured or dislocated; so that the patient cannot be pulled along by the force employed ab extra. Thus, if a surgeon pulled at the arm, to reduce a luxated shoulder, he would require one or more persons to hold the body of the patient steady, which would be employing counter-extension; or, if the surgeon were to pull at a dislocated finger, an affilant holding the writh or fore-arm would produce counter-extension.

COUNTER-Faced, or Contre-face, is a French term, expressed by the English heralds by Barry per pale counter-changed; always mentioning the number of bars the field is divided into.

COUNTERFEIT MEDALS. See Medals.

COUNTERFEETING the King's Coin and Sols. See Treason.

COUNTERFEITS: in Law. See Cheats.

COUNTER-Fissure, a Surgical term, denoting a fissure or fracture, produced by a blow or fall, in a part of the body (suppose the occipital bone) quite remote or even opposite to that which had received the mechanical violence. This accident may happen in many parts, but especially the head, where it is the most dangerous of all.

Counter-fractures or counter-figures of the head, are taken notice of by Celsus, but denied to exist by Paulus Aegineta. Tho' of the head are of different kinds. The external table sometimes remains whole at the part to which the violence has been applied, whilst the internal one is fractured; sometimes that part of a bone of the cranium which has received the blow remains entire, whilst another at its side is fractured; sometimes the bone to which violence has been applied remains entire, whilst the neighbouring one is fractured; and sometimes the fracture appears in the bone directly opposite to that which has received the blow. Sometimes, also, both the bone that has received the blow, and that directly opposite, are fractured at the same time. Sometimes a single blow produces several counter-figures in different places.

A counter-figure produced without any lesion of the neighbouring parts, that is, without extravasation, inflammation, suppuration, &c., is a very trifling circumstance, which...
which gives rise to no bad conflagrations, and exhibits no particular symptoms by which it can be discovered; neither is it necessary that it should be discovered. Very rarely, and only when the counter-failure is extremely large, can it be felt through the integuments. The external swelling and redness over the failure generally appears very late, or not at all; and probably only when the external violence has acted immediately upon the part, so that it is properly no counter-failure. In general, all other symptoms of a counter-failure are uncertain. Besides that, the parts in the vicinity of a counter-failure are far more rarely affected at the same time, than in fractures of the cranium; and, consequently, any very minute examination is seldom required.

In one particular case, a fracture, or even counter-fracture, requires the operation of the trepan; that is, when the inner sharp and rugged margin of the failure, or a splinter of the inner table of the cranium, presses upon and irritates the dura mater. The surgeon may suppose this circumstance to exist, when, in a case of fracture without depression, spasm and convulsions come on soon after the violence has been inflicted, and the patient is in complete possession of his senses; and in these cases he may apply the trepan. Sometimes the consequence is an inflammation of the dura mater, which is distinguished by its peculiar symptoms, and requires a peculiar method of treatment. This consequence may also happen in counter-failures. When inflammation comes on, we may possibly discover the situation of the counter-failure by the topical inflammatory symptoms; but this will be much more difficult if it only produces spasms and convulsions, unless perhaps the local fentations of the patient may tend to point it out. The same consequence may also take place when the external table is entire, and only the internal one fractured. The diagnosis and treatment in this case are the same as in the preceding. To suppose a fracture of the internal table, whenever there is a depression at the place to which the external violence has been applied, is probably erroneous.

The lower extremities are liable to counter-force, in consequence of falls upon the legs, and in leaping; and the same circumstances may also occasion counter-force in some parts of the pelvis, which may produce various irregularities in the symphysis. The superior extremities are liable to counter-force, when a person falls down whilst he is walking, or from a height, and thrusts out his hands or elbows to receive the shock. The consequences of such counter-force are various: it may produce dislocations, twinnings, separation of the bones, contusions in the joints, separation of the ossa innominata, laceration of the ligaments, &c.

Counter Foil, or Counter Stock, is that part of a tally, struck in the exchequer, which is kept by an officer of the court.

Counter Forts, are bodies of masonry built behind walls, from distance to distance, and joined to, or cemented with, them, in order to strengthen them, and lessen the pressure of the earth behind them. In fortification, there are commonly 18 feet between the centre of one counter-fort and another.

Counter Fugue, in Music, is when fugues proceed contrary to one another.

Counter Gauge, in Carpenter, a method used to measure the joints, by transferring, v. gr. the breadth of a mortise to the place in the timber where the tenon is to be, in order to make them fit each other.

Counter Guard, in Fortification, is a work composed of two faces, forming a faitant angle, which is in the capital of

COUNTER-Harmonical. See Contra-Harmonical.

COUNTER-Indication. See Contra-Indication.

COUNTER-Irritation, in Surgery, is the effect occasioned by any irritating application on a part at some distance from that which is diseased; e. g. in an inflammation of the eye, a counter-irritation is produced by applying a blister behind the ear; or, if the vital parts be affected by gout, a counter-irritation may be excited on the foot by friction with any stimulatling substance, or even by bathing the foot in hot water, &c. Again, if there be signs of oppression upon the brain, a strong vesicatory applied to the neck may produce a counter-irritation, and relieve the patient. In all these cases, there is not merely a local stimulus or nervous excitement produced in the part, attended with an increased sensibility, but there is also an increased action of the blood in the part which is irritated, as appears by redness and heat of the skin.

COUNTER-Light, a window, or light, opposite to any thing, which makes it appear to a disadvantage. A single counter-light is sufficient to take away all the beauty of a line painting.

COUNTER-Line, the same as CONTRAPOSITION; which see.

COUNTERMARD, in a general sense, a revocation of an order; or an excuse for letting aside, or deferring, a thing ordered to be done.

By the French law, a countermand differs from an effain. 1. In that, in the countermand, the confined is proposed to be deferred to a day certain, which is not in the effain. 2. In the effain, the cause of deferring the confinement is express'd, and affirmed to be true; but in a countermand that affirmation is not required.

COUNTERMARD, in the English Law, is where a thing, formerly executed, is afterward, by some act or ceremony, made void by the party that first did it.

This is either actual, by deed; or implied: actual, where a power to execute any authority, &c. is given by a formal writing, for that very purpose put off for a time, or made void; and implied, where a man makes his last will, and devises his land to T.S., and afterwards enfeoffs another of the same land: this feoffment is a countermand to the will, without any express words for the fame, and the will is void as to the disposition of the land. Alfo, if a woman, feied of land, in fee-simple, makes a will and devieth the fame to C.D. and his heirs, if he survive her; and after the intermarriage with the said C.D.: in this case, by taking him to husband and curteret at the time of her death, the will is countermanded. Terms de Ley. But if a woman makes a lease at will, and then marries, this marriage is no countermand to the lease, without express matter done by the husband to determine the will. A person may countermand his command, authority, licence, &c. before the thing is done; and if he dies, it is countermanded. There is also a countermand of notice of trial, &c. in law proceedings.

COUNTERMARD, or COUNTER Order, in the Detachments. When the troops commanded, although on a march, are countermanded, the service of the detachments is accounted performed, and they go to join their respective corps.

To countermand is also to issue contrary orders to thole already given; to contradict or forbid the execution of former orders, &c.

COUNTER-
COUNTER MANDATE. See CONTRAMANDATUM.

COUNTER-March. This is when an army, a regiment, or a detachment, performs a march different from what it originally intended. This is what is called a counter-march, in the third tense of the word. This appellation is also given to a change of the wind or of the face of a battalion, by which the men who were on the right, or in the front, take up the ground originally occupied by those on the left or in the rear.

COUNTER-Mark, a second or third mark, put on any thing marked before. The word is applied, in commerce, to the several marks put on a bale of goods belonging to several merchants; that it may not be opened but in the presence of them all, or their agents.

In goldsmith's works, &c. the counter-mark is the mark or puncture of the hall, or company, to shew the metal is standard, added to that of the artificer who made it.

Counter-mark of a horfe, is an artificial cavity, which the jockeys make in the teeth of horses that have out-grown the natural mark; to disfigure their age, and make them appear as if they were not above eight years old.

Counter-mark of a medal, is a mark added to a medal, a long time after it's being struck.

Counter-marks appear to be faults, or flaws, in medals, disfiguring the ground, sometimes on the side of the head, and sometimes on the reverse; particularly in the large and middle-sized brace: yet they are esteemed as beauties among the curious, who set a particular value on such medals, because they know the several changes in value they have undergone, which are expressed by those counter-marks; as was the case with the counter-marked coins of Henry VIII. and of Mary of Scotland, in modern times. They are also very rare.

Antiquaries, however, are not well agreed about the significations of the characters they find on them. On some, N. PROB. or others, N. CAPR. or on others, CAPR. R.M. NT. AUG. SC. Some have, for their counter-mark, an emperor's head; some several; some a cornucopia.

Care must be taken not to confound the monograms with the counter-marks: the method of distinguishing them is easy. The counter-marks, being struck after the medal, are dented, or sunk in; whereas the monograms, being struck at the same time with the medals, have rather a little relieve.

COUNTER MINE, subterraneous excavations or cavities, made by the besiegers, to counteract and render useless the besieger's mines, which are hollows or cavities that they make under those places, which they intend to blow up with gunpowder. The distinction then, between mines and counter-mines consists in this, that the first are made by the besiegers, and the last by the besieged. Both mines and counter-mines, however, are made in the same manner, and for the same purposes; namely, to blow up their enemies, their batteries, and works. But the principal galleries and mines of the besieged are commonly made before the place is invested, and frequently at the time the fortifications or works themselves are erected, in order to save expenses; whereas all the mining operations of the besiegers are commenced and carried on after the investiture. Writers on mining are generally apt to express themselves in terms rather loose, taking into the definition of a mine or counter-mine the passage under ground leading to it, and part of the communications, if it communicates with other mines or counter-mines. A mine or counter-mine, however, strictly speaking, is the hollow or cavity which is made or excavated under the place intended to be blown up, and where the quantity of powder, necessary for producing the proposed effect, is placed or lodged. This hollow, or cavity, is usually called by them the chamber, or fourneau; and the passage leading to it, the gallery. The perpendicular distance from the centre of the chamber, or place where the powder is lodged, to the nearest surface of the ground, is called the line of least resistance.

The pit or hole, made by the springing of a mine or counter mine, is called the excavation.

The fire is communicated or conveyed to mines or counter-mines by means of a pipe or hose, made of coarse cloth, the diameter of which is about an inch and a half, called foufflon, extending from the chamber to the entrance of the gallery, where there is fixed a match to the end of it, in order that the miner, who sets fire to the powder contained in it, may have sufficient time to retire before the match is burnt up to the powder.

In order to prevent the powder from contracting any dampness, the foufflon is laid in a small trough, called auger, about 3½ inches broad, and made of boards joined together lengthways, with straw in it, and a wooden cover nailed upon it at top.

For filling this pipe that conveys fire to the mine or counter mine, about half a pound of powder is usually required for every foot of it in length. The exact quantity, however, depends on the size or diameter of the foufflon.

The foufflons are generally tarred.

The besieged commonly make a great many small mines under the glacis, of about fix, seven, or eight feet deep only under ground, which are called fougates, or foujages. They also make what are called coffers, or coffins, which are a kind of barrels or boxes, from three to four feet long, and from a foot to eighteen inches wide, which they place four, five, or fix feet under the surface of the glacis, and about four yards distant from one another.

The whole art of mining and counter-mining depends on the four following operations or particulars:

1st. The making of the galleries and the fourneau, or chambers; and the securing of the earth against falling in, by means of wooden frames and props.

2dly. In the loading and the dropping up of the mines or counter-mines, in such a manner as to be ready for springing when necessary.

3dly. In knowing the proper charges for mines or counter-mines, placed in different soils, and at different depths under the surface of the ground, in order that the effects arising from the springing of them may answer the intentions or purposes for which they were made.

Lastly. In carrying on the galleries, according to given directions and to given length, in such a way as to place the fourneau, or chambers, directly under the objects intended to be blown up, and at the proper depths under ground. For these particulars, see the article Mine.

Anciently a counter-mine was a vault made and prepared in the earth, or rampart of the encinte of a place, behind the wall. Such counter-mines, however, are at present rejected, because of the conveniences for the miners of the besiegers to make their mines.

A counter-mine, in a halfton, should be joined by several small channels or branches, which ought to traverse the earth of the halfton in such a manner, that on whatever side the besieger's miner opens the ground, or the wall, he sees every where openings and chimneys, capable of giving vent to his powder, and preventing its intended effects. It is by means of such openings, which reach quite to the foundations, and have vents and air-holes behind, that the besieger's miners are often deluged; and the powder they place...
place in their mines is wetted or moistened with water, and rendered useless.

There are two sorts of counter-mines. Those of one sort are made at the time the place is built or constructed: these are arched or vaulted galleries, about six feet high and from three to four feet broad, and are called galeries majeurs. The other counter-mines are made in time of a siege, and people go along them on their knees, or at least stooping, and they are called channels, branches, or rameaux.

The counter-mines of the body of a place are made under the terre-plein of the rampart, on a level with the bottom of the ditch. The entrances to them are by the gorges of the ballions. They are about ten feet distant from the revetment, to which they are parallel, and with which they communicate, by means of rameaux, from distance to distance. These rameaux are of the same materials, and in the same proportions, as the galeries majeurs.

From the counter-mines of the place one descends into the caponiers, and then ascends from thence into the counter-mines of the covert-way, from which rameaux are carried towards the field, that serve, in time of a siege, for making fourneaux, or small mines, which blow up the works of the besiegers, and retard their approaches.

In order to discover the besieger's mines, cogeons, wells, or pits, are made obliquely in the ground, where a miner is suspected to be at work; and when these wells or pits are judged to be lower than the besieger's mines, little heads or channels are driven in every direction, to find the enemy's mine, or to enclose it and render it useless, by giving vent to it; cutting the train, to prevent him from springing it; taking the powder away, or spailing it, by pouring a quantity of water on it or round it.

These heads should be driven perpendicularly to the capital of the ballion, when you suppose or apprehend there is a mine in or near its flailant angle, and parallel to the face, if you are fearful there is a mine in it; and if the ditch be dry, they should be driven under the bottom of it, as the enemy may then have a gallery under it also.

We know from different writers and historians, that the ancients made mines to surplic towns, and throw down their walls. We have every reason, therefore, to believe, that they also had methods for discovering them. And Vitruvius, in the last chapter of his last book, informs us, that the inhabitants of Marcellis, when it was besieged, supposing the enemy of carrying mines under the ditch, dug it deep in all round the town, and thereby discovered under the ditch the avenues or galleries of thirty mines, which the besiegers had prepared for surprising them.

Counter-mines both have been, and may be, made ufe of to great advantage in the defence of places, from the moment the besiegers approach the foot of the glacis.

As in the course of time, during a siege, the besieger will find it necessary to retire from advanced or out-works, and leave them in the hands of the enemy; whether the besiegers render themselves masters of them by force or by fap, they ought to make in them a quantity of small fourneaux, to which they may set fire in retiring, and by means of them destroy the besieger's lodgments and works.

They should have a number of fourneaux under the glacis, to be made ufe of in time of need or necessity. These will destroy the besieger's works in his whole progress through it, unless, being his first labours overturned and taken, and surmounting similar accidents, he do not carry his lodgment to the crest of the glacis, but content himself with the surrounding of it by fap, and, by means thereof, with giving vent to the fourneaux; which, though a tedious method of proceeding, is the safest and most effectual one he can adopt. But if the ditch be dry, though he may give vent to the four- neaux, or small counter-mines, that have been made under the glacis, the lodgments which he makes a-top of it will not be secure against the effects of other counter-mines; for the besieged can make counter-mines under these fourneaux, that vent has been given to; and these counter-mines, when sprung, will be attended with more dangerous and surprizing effects, as they will do more execution, and the snare will be less expected. A folly or fortune made by the besieged, at the time of springing them, will increase the surprize, astonishment, and confusion of the enemy.

There is one essentinal circumstance to be attended to in the construction of counter-mines, which is to guard against their producing the effect, when sprung, of throwing any part of the covert-way into the ditch, instead of overturning the adjoining lodgment of the enemy, and the fap, which he may have commenced for his descent into the ditch. For this reason, care should be taken to keep the chamber of the counter mine farther from the counterfarc, or exterior side of the ditch, than the perpendicular height of the earth above it, which it has to raise or throw up.

It is not necessary to wait till the besiegers have made their lodgments across the glacis, to annoy and disquiet them by means of counter-mines, unless it be well known and ascertained that they are not defending, or making excavations under ground, for the purpose of giving vent to the subterraneous works that may have been prepared by the besieged. In this case, the besieged ought even to amuse them as much as possible, by disputing with them their lodgments. But after they shall suppose that they have well established the head of their trench, and their lodgments, the besieged should blow them up, by means of fourneaux and counter-mines, and also overthrow, if possible, the place of arms which they may have made for the security of their advanced works, and thereby oblige them to look for that security under ground which they cannot find above it. Thus they would be forced to make a number of subterraneous works, to which the besieged ought to oppose themselves, by means of intersecting branches or rameaux, which have all of them a communication with the grand gallery or canal of the counter-mines. These rameaux being properly made, will facilitate the construction of the fourneaux and counter-mines that will be made where they may be wanted, for overturning the works of the besiegers, and thereby either rendering them useless or greatly retarding the progress of them.

As these contrivances depend on the skill and management of the commandant or governor, the necessity of times and occasions, and the convenience of places, will furnish him with the means of inventing new ones. Certain it is, that if he is determined to defend the works entrusted to his care, and knows how, the enemy will not gain one foot of ground, after he once gets within pistol shot of the out-work, without losing a good deal of time. It would otherwise be ufeful to fortify places, and to know how to defend them, if this knowledge did not lead us to understand that the use of it is to render a moderate number of troops equal to the force of a powerful army.

If the ditch be dry, fourneaux prepared beforehand will be very useful for overturning both the fap and the adjoining lodgment: and when this cannot be done, in consequence of the ditches being full of water, the besiegers will not even then be masters of the covert-way, although the fap be commenced, and even open for entering it; for the besieged ought not to abandon it entirely, till the besiegers have placed their cannon along the faces of its parapet, to destroy the palisades and moveable traverses that are placed within it.
it. Under these faces of the parapet of the covert-way there should be good large fourneaux, for overthrowing the batteries on them, when they are ready to fire or open. Nevertheless, the besieged ought not to put fire to these fourneaux, but as late as possible; but should wait till the cannon of the flanks of the place, high and low, have endeavored to ruin or destroy the construction of those batteries that are opposite to them. Meanwhile the besieged need not entirely abandon the covert-way, since they can always go to it and return on one side and the other, under cover of the moveable traverses, and the retrenched places of arms; and when they are forced to quit it, without any hopes of returning to it, they can spring the fourneaux already mentioned.

The besiegers, having no longer an enemy to combat in the covert-way, will attack the retrenched places of arms; the taking of which will give them a good deal of trouble, if they be invested with masonry, and well travered and palisaded in the bottom of the ditch. They will, in such case, be obliged to open a passage for themselves into them by means of fourneaux, which they will not be able to make easily, if the ditch be well defended. Thus the attack of these small works will retard, for some days, that of others of more importance for the preservation of the place. The officer who commands in such a small out-work, should retrench himself in it with good palisades, for the security of his retreat; and in retiring, he should spring the fourneaux that have been made there, to destroy the whole work, or to wait till the enemy has made his lodgment within it before he springs them, in order to envelop or bury him in the ruins of it.

By means of counter-mines, the defence of the ravelin and its retrenchment may also be rendered very obilinate, and the taking of them troublesome to the besiegers; and when the troops employed in their defence are obliged to quit them entirely, they should spring the fourneaux that have been made, for the destruction of the retrenchment.

It rarely happens that the besieger, in his attack, embraces more than one front of the place attacked. What he principally occupies is commonly the ground necessary for placing or erecting the batteries opposed to the flanks of the bafions attacked. As these batteries cannot exist without an epaulement, to cover them from those parts of the place that can otherwise see them, and are not embraced by the attack, it is this epaulement that should be attacked and destroyed. In order to accomplish this object easily, the besieged should push a subterraneous gallery, beginning from the ditch of the ravelin not attacked, and the nearest to the attack, till it be carried quite under this epaulement. There they should make fourneaux or counter-mines, which, by their effects in springing, will uncover the flanks of the batteries, that will soon be dismounted by the cannon of the ravelin not attacked, and of other parts of the place that can discover them. This should be practised both on the right and left of the attacks, if possible, at the same time, in order to sur prise the enemy at the same instant with a sally, supported from all the works of the place the nearest to the attack. The besieged should even attack the enemy in those places where he has least reason to suppose he can be attacked; and to do it with the greater certainty and safety, they should have a subterraneous gallery from the middle of the curtain to the angle formed by the two demi-gorges of the ravelin. This gallery would, in its passage, serve as a casemate for the defence of the ditch, as well as a way or road to the ravelin, under which several counter-mines should be made, but not sprung till the enemy is occupied in giving the assault to the body of the place. The fire being put to the counter-mines under the lodgment, which they will of course destroy, the besieged should, some of them, return into the ravelin, and establish a lodgment there, if it be possible. This diversion will produce a good effect, will furnish reason or an occasion for the enemy to abandon the breach made in the body of the place, and will afford them sufficient time for establishing themselves in the ravelin: for it is doubtful whether the enemy will then persevere in his attack on the body of the place, or, leaving it, will go to support the troops attacked, overcome in the ravelin. In truth, things of this nature happening at the same time, are apt to embarrass the greatest commander. But if the besieged have taken care to have a branch of the canal of counter-mines made under the ravelin, and this branch pulled quite under the ruins of the breach in the same, these rains may be easily thrown away or aside by a fourneau, and the enemy thereby deprived of a passage into the ravelin, which will force him to attack it anew as at first.

A miner that knows how to make a proper use of counter-mines, constructed as they ought to be, may stop the enemy's miners, flisse them, or destroy their works in such a manner, as to make it impossible for others to return to the same place; or, if he pleases, let them enter the galleries of the counter-mines, block up the galleries, and either take them prisoners or kill them as he thinks proper. The besieged, indeed, who know how to avail themselves of all advantages, will be for a considerable time, and in a great measure, masters of the fate of their enemies. For without mentioning all the snares and stratagems, which the besiegers cannot foresee, who, finding it impossible for them to advance, and the under-ground passages stopped, and unable to make mines that can be of any use to them, are driven by necessity to brave the mines, and carry on their attack above-ground; which, if they be obilinately opposed or relented, exposes them to many disasters, hardships, and difficulties, not only in making their approaches, but also in making their lodgments on the covert-way, and in every other place where they dare to carry on their works. If they advance by lap towards the covert-way, it will be proper to give them notice, from time to time, by some fourneaux or counter-mines, of the danger they are in. But if they make their attack sward in hand, it will be in a great measure useful to make use of the counter-mines; for, though they might flitter and alarm the troops during the attack, and bury some men in the earth they throw up, the excavations made by them might serve for lodgments. It is, therefore, better and advisable to reserve them for disturbing the besieger's works, and of course for gaining time. Besides, the counter-mines, intended for being first sprung, should not be loaded till they are about to be used, that they may be always ready for preventing the enemy from advancing, which they cannot do, if they are charged beforehand. The besiegers, on reaching the covert-way, may attempt to re-enter the ground, whilst he completes his lodgment; but they will be again obstructed by the counter-mines, and be exposed on all sides to the same difficulties as before. The moment they begin to raise batteries for making a breach, it is proper to destroy all their lodgments on the covert-way, by springing the uppermost counter-mines, without waiting till the guns are mounted: for these small counter-mines hoist the earth where the cannon are to be mounted; and the next counter-mines that are sprung throw them, after they are mounted, towards the town. After these batteries are repaired, and the guns are again mounted, which cannot be done in a very short time, the next counter-

COUNTER-MINES.
mines, if they be properly dispos'd of and charged, will, when sprung, throw the guns a second time towards the place, and into the ditch. And if there be a depth of earth from 2½ to 30 feet, the same thing may be done fix or seven times, which must astonish and dishearten even the most obstinate and persevering enemy.

**Counter-Mure, or Counter-Wall.** A little wall built close to another, to fortify and secute it, that it may not receive any damage from the buildings contiguous to it.

By the custom of Paris, if a flable be erected against a partition-wall, there must be a counter-wall added, eight inches thick. M. Buller observes, that the counter-wall ought never to be bound, or connected, with the proper wall.

**Counter-Mure, in Fortification.** See Contra-Mure.

**Counter-Opening, in Surgery.** is an incision made in the most dependent part of an abiecfs or wound, opposite to some other wound already existing.

**Counter-Pole, in French Heraldry.** denotes what we term pafs of fix per fife counter-changed; the number of division being always exprefled.

**Counter-Part, a part of something opposite to another part.** Thus in Mufic, the bass and treble are two counter-parts, or opposite parts.

**Counter-Part, in Law.** When the several parts of an indenture are interchangeable executed by the several parties, that part or copy which is executed by the grantor is called the original, and the rell are counter-parts; though it is better, and of late it is more frequent, for all the parties to execute every part, which renders them all originals.

**Counter-Palliant, in Heraldry.** denotes two animals paffing or walking different ways, one to the dexter, the other to the sinister.

**Counter-Plea, in Law.** A replication to a plea, or prayer.

When a tenant by courtesy, in dower, or other real action, prays the view or aid of the king, or him in the revision, for his better defence; or if a stranger to the action began defire to be admitted to lay what he can for the safe-guard of his ellate: that which the demandant allures against this requel, which it should not be admitted, is called a counter-plea.

In this fhape it is used in Stat. 25 Edw. III. c. 7. So that counter-plea is, in law, a replication to "A d Prier," and is called "counter-plea to the voucher." But when the voucher is allowed, and the voucher comes and demands what cause the tenant hath to vouch him, and the tenant fways his caufe, upon which the voucher pleads any thing to avoid the warranty; this is called "a counter-plea of the warranty." *Te ms de Ley.* Stat. 3 Edw. I. c. 39. There is also a counter-plea to the plea of clergy; see *Benefit of Clergy*.

**Counter-Plot, a plot, or intrigue, contrived to thwart and overthrow another.**

**COUNTERPOINT, contrapunctum.** Lat. Contra punctus. Ital. in Mufic, is nearly synonymous with composition; with this difference, according to Ruffnau, that "the invention of melody, or a fingle part, was called composition; but that counterpoint implies the harmony of two or more parts." To this difference we cannot fubferve: as it extends the title of composer to the inventor or composer of a high part; an honourable title, due only to the masters of harmony, whereas almost all good melody is derived. There is as much difference between the arranging fingle founds into a tone, and compofing a piece of mufic in many parts, as between writing a ballad and an epic poem. The fubject of a ballad, indeed, may be made the foundation of a poem of great length, and that of a naked melody may be the theme of composition in many parts; but if the author of the melody is incapable of cloathing it with harmony, he is no composer.

Of the natural production of harmony, or chords, from the vibrations of a fingle ftring, or founding body, we have given an account in the article *Basse fundamental.* This is the only natural harmony with which we are acquainted; the ref is metaphorical, and allusive to practical mufic; and even this fundamental chord cannot be called a work of nature, for the materials by the medium of which it arrives at our ears are artificial; nature neither calls a bell, nor twiffs a ftring. The Mercurian lyre, if we may believe the poets and fabilits, was not only formed but ftring by nature. For among the various opinions of thefe ancient writers who have mentioned the Chelys, or Tellus, and ascrib'd the invention to the Egyptian Mertius, that of Apolloforus is the most intelligible and probable. "The Nile," fays this writer (Biblioth. lib. ii.), "after having overflow'd the whole country of Egypt, when it returned within its natural bounds, left on shore a great number of dead animals of various kinds, and, amongst the refl, a tortoise, the flesh of which being dried and waffled by the sun, nothing was left within the shell, but nerves and cartilages, and these being braced and contracted by defecution, were rendered fonoous; Mercurius, in walking along the banks of the Nile, happening to strike his foot againft the shell of this tortoise, was fo pleased with the found it produced, that it fuggell'd to him the firft idea of a lyre, which he afterwards contrufed in the form of a tortoise, and ftring it with the dried fines of dead animals."

When persons unacquainted with the refinements of the art, talk of natural mufic, they only mean fuch ftrains as are common, and which, by frequent hearing, they think they understand; but, literally, there is no natural mufic; the whole is a work of art.

The title of counterpoint, given to composition, or mufic in parts, preceded not only the invention of clefs, but of lines and spaces. In many millif there have been the infamy of fimultaneous founds in points, or marks over particular words and syllables, like accents; and, afterwards, as the monks and prelates began to feel a pleafure in the confonance of a 4th, a 5th, or an 8th, a fecond point or dot was placed over the firft. These were not in the beginning regulated by lines, but by their greater or lefs degree of elevation and distance from each other. After fome time, we found a line drawn through fuch dots or points as were on its level; then two lines, one red and the other yellow, to denote the tenor and base. After this, two or three centuries elapsed before a third and fourth line were added, at which the Roman millif have remained ever fince. This is the fhort history and origin of the term counterpoint.

We take it for granted that whoever thinks of composing knows how to perform with his voice, or fome instrument; the productions of others—knows a common chord, and wathing of thorough base—and if the inftrument on which he plays is the piano-forte or harps, to much the better.

As a foundation for the whole art of musical composition, we fhall give the common chord of C natural in all its fages: after this, the table of intervals fhould be flud'd, in order to know in half notes or femitones, the distance between found and found. See *Interval. Then the 8 notes in the diatonic scale, which form a key in fimple melodies, making C the reprefentative of all major keys, and A of the minor. We, at firft give the minor key defending, to avoid accidental

\[ \text{flharps,} \]
CONTRAPUNT.

Sharps, of which we shall speak hereafter. See the terms Major, Minor, and Key.

Concerts are the union 8th, 9th, 4th in a common chord, and with a 6th. The only intervals that can rise and fall together, gradually, are the 3d, and 6ths, and of these the union and progress are unlimited. An entire movement may be composed in any notes of the time table, put into measure, consisting of nothing but a series of 3ds, or 6ths. See Plate VI. N° 3.

For the fundamental base to every found of the scales major and minor, ascending and descending. See Plate VI. N° 5.

See in Plate XII. an ascending and descending scale with two fundamental bases to each note, and another with three fundamental bases.

Ascending and descending scales in the base, with a treble, or difficult. See Plate VII.

Example in C major.

See Thorough-bass, Basso Principale, and Plate II.

Out of the scale of each key, he should try to form melodies in various measures; at first, totally without accompaniment, and then from the fundamental and supposed bases to the scales, Plate VII., III., try to discover what base will suit the passages in his melodies.

Thus far no notice has been taken of discord, except sometimes adding the 7th to the common chord, which is the only addition to it, that would not rob the base of the title of fundamental.

Discords are the 2d sharp, 4th or tritonus, the 7th and the 9th. But every concord may be made a discord by the note above it: as the 3d by the 4th, the 4th by the 5th, the 5th by the 6th, the 6th by the 7th; and indeed the 8th by the 9th.

Every interval that exceeds the bounds of the octave, is termed a compound interval, or octave of some simple interval: as the 9th is a recurrence of the 2d, the 10th of the 3d, the 11th of the 4th, the 12th of the 5th, and the 15th of the octave.

The 5th is composed of two thirds, a major and a minor, or a minor and a major; the 3d of two seconds; the major 2d of two semitones.

Before we enter on the preparation and resolution of discord, it may be necessary to characterize all the natural intervals within the limits of the octave.

The succession of unisons (though they cannot be called intervals) is prohibited in counterpoint, unless when two treble parts sing, or play throughout in unisons, with design.

The 4th is a discord, and prepared and resolved in the base: it is accompanied by the 5.

The 5d, an imperfect concord, is wanted in the accomplishment of every other concord and discord, except the 2d and 5.

The 4th is a perfect concord, when used in the common chord between the 5th and 8th, as it is when joined to the 6th and 9th; but with the 5th or the 2d it is a discord. The 4th is accompanied by the 5.

The 5th is a perfect concord, but made a discord when united with the 6th. The complete chord is 5.

The 6th is an imperfect concord, often doubled and accompanied by the 3d.

The 7th is a discord joined to the common chord, or the 9th.

The 8th is a perfect concord; and wanted in all choruses, except those of the 2d or 9th.

The 9th is a discord, and octave of the 2d, but differently accompanied. See Plate V., an engraving of a thorough-bass. Card.

There are in melody three progressions, or ways of moving from sound to sound: Motu recto, when two parts rise or fall gradually together.

Motu oblique, oblique motion; one part moving, and the other remaining stationary.
COUNTERTOIN.

Moto contrario, contrary motion; one part rising and the other falling.

Plain counterpoint. is note against note, in sounds of equal duration, and without disords.

Figurate or florid countepoint, requires measure, in notes of different lengths.

Relative sounds. are such as belong to two or more chords; as C is related to F and A, as G is to C and E, being essential sounds to the chords of each. See Plate XII.

The succession of two 5ths rising or falling together, is prohibited from the want of relation; as there is no found in common with the chords of G and A, or G and F. In the construction of a grammatical sentence every word has its relative, and the breach of the rule against 5ths in succession, is equally offensive to a cultivated ear, with a false concord to the mind in grammar.

Two unisons, or two octaves in succession, in full harmony, are prohibited from their want of variety; but these can not only be borne, but, when admitted with design, have a good effect. The ancients seem to have had no other simultaneous harmony or music in parts, than what was produced by a succession of multiplied unisons and octaves; nor, except in Europe, is counterpoint cultivated, or does it afford pleasure to the natives of three parts of the globe.

It is become necessary, in modern compositions, that the melody should be phrased: that is, divided into periods of an equal number of bars; as 4, 8, 12, or 16. As verse is regulated by feet and syllables, melody is lame and ungraceful if its periods conflict or an unequal number of bars, as of 5, 7, 9, 15, or 17. A verse with a syllable too much or too little, does not hold more than such imperfect measure in music. A period of this kind in melody, is called by the French phrasé manuéle. Neither Fouches, nor any of the theorists of the last century, gave their examples in an equal number of bars, upon principle. But all masters and writers of elementary treatises on counterpoint, should now enforce it as a precept, that melody should be regularly phrased by all young students in composition, who aspire at grace. Every movement which derives its name from a dance, such as the minuet, rigadoon, gavot, farandole, &c. has its strains regulated in this manner. In serious dramatic airs, in sudden gusts of passion or surpires, or in comic scenes, to produce some grotesque or humorous effect, the phrases are frequently broken with fercés; but never, where either grace or energy is required, should a young composer be instanteous to the phrasology of his melodies, See Rhythm.

And not only the number of bars in every strain or period should be regular, but the accents regularly placed in each bar. This precept concerns the performers as well as composers. See Accent.

The preparation and resolution of disords require much study, experience, and reflection. Dr. Pepusch has given in 2, 3, and 4 parts, the shortest and most clear rules and examples for this important article in counterpoint, that are to be found in any elementary work.

We have not room on our plates for the notation of his examples, but shall give here a short specimen of each discord, and refer to his excellent little work, entitled "A Treatise on Harmony," for the rest.

Concerning discord, three circumstances are to be considered: as on what part of a bar they are to be prepared; when struck; and when resolved.

In common time, two notes in a bar, the 1st is accented, and the 2d unaccented. And, in common time of four notes in a bar, the 1st and 3d are accented, the 2d and 4th notes unaccented. In triple time, the 1st, 2d, and 3d notes are accented, and the 4th is unaccented. Of the three circumstances, therefore, related to discord, it is to be remembered, that the preparation is on the unaccented part of a bar; the discord is struck on the accented part, and resolved on the unaccented part of a bar. See examples of all discord in notation of 1, 2, 3, and 4 parts. Plate XIV. XV. XVI.

There are still other discord that are unnoticed in the figuring, called falling notes. See Accent. This subject has been well treated by Dr. Pepusch, and the other able theorists on whom we lean. But as an article in a dictionary is not a treatise, we must confine our examples into short a compass as necessity requires. See Plate XVI. The passing-notes, and dissonance alla eugìna.

Not only the succession of 5ths and 8ths, is prohibited in counterpoint, but the resolutions of them. As Caraffa's wife was not only to chaste, but infallible. See examples of this harmonical vice, and of the prohibitions. Plate IV.

P. Martinu has given a general rule for avoiding the resolution of 5ths and 8ths, by not moving from any consonance to a perfect concord by similar motion: as from a 3d to the 5th—from the 8th to a 5th, or from a 5th to a 3d or 8th, or from a 6th to an 8th, &c.

The air, song, sonata, or whatever the movement may be, which a fluent in counterpoint attempts to compose, should begin and end by some found or sounds of the common chord of the key note. In a major key, an accidental sharp becomes the 7th of a new key. So that if the piece begin in C, the 1st additional sharp that occurs is uniformly F__, which leads to G, the half-note above such sharp fo C__ leads to the key of D minor; G__ to A, and D__ to E minor. In minor keys, the 7th is to constantly sharp, as hardly to be called accidentally, as in the key of E, A, the 7th requires an accidental sharp, whenever it is used, ascending.

An accidental flat in any of the parts of a major key becomes the 4th of a new key. As in F, which has only one flat at the clef, and a flat at E implies the key of B, which has two flats at the clef, and in the key of D minor, which has but one flat at the clef, a flat occurring at E, implies the key of G minor, which has two flats, &c. See Modulation and Thorough-bass, or Accompaniment without figures. See thorough base chords, and rules for playing without figures. 

A regular discord, essential to the harmony, is the suspension or anticipation of some found of the preceding chord,
chord, by which it is prepared. Its resolution is the de-
sending one degree on a concord to the bafe, supposing
it to be stationary. The 2d makes the union a discord.
It is prepared and resolved in the bafe, which de-
sending one degree, renders it a 3d. See examples of the
preparation and resolution of all the regular discords; Music,
Plate XIV.
As the 3d and 6ths of any key are the only concords that
can move up and down in regular succession, the student
is excelling in his ear in different mentions in the two keys of
C and A natural, must remember that a clufe cannot be
made in A minor, without an accidental G &c., expressod
or understood. See succesions of 3d and 6ths in Music,
Plate VI.
Till about the middle of the last century, F the 5th, as well
as G, the 7th of A minor, used to be made sharp in ascending.
But Tartini found that F &c. in that key destroyed its minor
effect; he rather preferred the leap of an extreme sharp 2d
from F natural to G, &c., than destroy the natural pathos of
the minor key. But as some writers on music, and composers,
till adhere to the old scale of a minor, ascending to the
eighth through the sharp 6th as well as 7th, we shall make
F both natural and sharp, in the ascending scale of a minor,
to give the young composer his choice between them.
The fundamental or principal base of these scales being
impressed in the memory, and a treble drawn from the chords
given to the scales in the bafe, the young harmonic will try
to find a base to the scales in three parts; the treble
moving by 3ds. See Plate VII. Two fundamental bases
to each note: three fundamental bases to each note; and
the continued or suppolted bases to the scales.
Having given the several treble rules with their accom-
paniments; described the several intervals; the preparation
and resolution of discords; it is time to recommend to the
young student in counterpoint, the rule which has been for-
med for accompanying the scale ascending and defending, in the
bafe, major and minor, which seems to have been invented
as far back as in France, under the title of
Regle de l’Octave; (which read;) but by whom is not
settled. Roufcau, in the article, says, “this harmonic
formula was first published in 1700 by the Sieur Delaire.”
But in treating of accompaniment, he alludes it to Campon.
If it could be ascertained that either of these musicians was
author of the rule, it would have no doubt of its being
the latter. In 1700, no such harmony as that of the
Regle de l’Octave was given to the scale; nor, till about the middle of
the last century, was it so accompanied. But of late years,
almost all harmony seems built on the chords given to the scale
in this rule; which is not only useful in accompanying a bafe
without figures, but in harmonizing the scale in four parts, by
young composers, and in extracting melody from its chords.
A specific harmony being given to each note of the scale,
ascending and defending in every key; if the young com-
poser, or performer, is certain what key he is in, the know-
ing this rule alike in all keys, will remove every doubt as to
the harmony of each bafe which he wishes to use or accom-
pany. We shall therefore, in the plates, give this rule in
a figured base, and write the chords in notation with their
full complement, which may be drawn out into a score,
making the upper part the first treble, the middle note of
the chord the 2d treble, and the lowest note the tenor.
For fundamental base, and suppolted base, to the treble
scale, see Music, Plate VI. and VII. And for a division
bafe to the treble scale major and minor, ascending and de-
scending, see Music, Plate VIII.
The young musician must remember, that this rule is only
to be rigidly followed, when the base rises or falls gradually.
In wider intervals, as in leaps from the key note to the 3d,
4th, 5th, or 6th, common chords will do, in writing or
playing, unless some discord is prepared for the second
found of such intervals, such as a 4th, 7th, or 9th, which
never occur in the regle de l’Octave. See Music, Plate V.
As florid, or figurative counterpoint, includes every spe-
cies of composition, such as imitations, fugues, canons, double
counterpoint, &c., though these will be found fully defcerbed
and discussed, severally, in their places, yet they must be fpoken
to here, in order; as constituent and important parts of
the present article.
Imitation is an irregular fugue. When a passage led off
by any one of the several parts of a composition is repeated
by another in the same kind of notes in any part of the scale,
it is called imitation, to distinguish it from a regular answer
to a subject of fugue.
Fugue requires an anwer in the unison, octave, 5th, or
4th of the key, in which the subject is led off, to be ac-
counted regular; as in those keys alone, the intervals will
be the same. This rule will be illustrated with examples in
notes, in the music plates.
Canon, is a perpetual fugue; as the part which leads off
the subject gives law to the retl, from the beginning to the
end of the movement: thence canon, from κανών, Gr. regul,
norma, a rule or law. In Bird’s well known canon of Non
volitis Dominie, the first treble sings in the key of G major,
the second in D, the fourth below, and the third, or base,
in the double octave, or 15th below the first treble; but
always in the same intervals.
The contrivances and difficulties of this species of compo-
sition, with which ingenious men have loaded it in pure
pedantry, and ambition to be thought more cunning artists
than their neighbours, have loft that reverence which used
to be paid them, ere melody was cultivated, and its more
intelligible merit was talked and understood. Yet, as canons
are still respected by masters, who know the difficulty of
their construction, the young contrapuntist, at his leisure
hours, as an intellectual employment, should try his strength
in exercises of this kind. Though out of the infinite num-
er of canons known in our own country, and composed by
masters, the only two that continue in favour, and general
use, may be said to be Non volitis Dominie, of Bird, and
“Let us drink and let’s sing together,” by Dr. William
Hayes of Oxford; but the favour of these, in private fo-
ciety, is nearly equal to that of the two national songs,
“God save Great George our king! ’” and “Rule Brittan-
ia,” in public.
Examples of fugue and canon are given in notation in the
music, Plates IX, X, and XI.
Double counterpoint is not so easy to describe as fugue and
canon. There is no chapter on the subject in Pepusch,
nor do we remember its being mentioned in his treatise.
Griffinaeus is silent on the subject, and Brodfard juft mentions,
Fuga di contrapunto dopio, without explanation. In later
writers, however, it makes a long article, of no very easy
comprehension. The shorttell and most intelligible explanation
which we can give of this artful contrivance is: “a com-
position written in such a manner, as that the several
parts can be inverted, and reciprocally forte as accompani-
ments to each other, and the harmony will be good.”
Roufcau does not mention this species of counterpoint;
but in the Supplement to the first edition of the Encyclo-
pedia, there is a long, though an obscure article, on double
counterpoint, but illustrated with no good examples. It is
mentioned in Galther, from a work of Matheun, but un-
noticed in the plates. The inventor, however, is not new, for
P6bro Ceronio, della Mylica, published in Spanish at Naples,
1613, in folio, contains a long chapter on the subject, liv. xii.
p. 734, which he thus introduces: “To the end that no-
A thing
thing in counterpoint may remain unexplained, we shall show in what an artificial and wonderful manner, and with what good effect, the Italians can treat a simple melody (cen
to falso), in contrapuntus doppio (contrapunto doblado), which is nothing more than changing the parts, making the high-
pest the lowest, and lowest the highest, in various ways; by
which a new melody and a new harmony are produced, and
effects totally different from those of the first performance.
And this may be effected in three different ways; in the
8th, the 10th, and 11th."

This is a very clear and accurate definition, written more
than 100 years before Mattheson's book was published.
For the full title of Cerone's work, which is extremely
scare, see his biographical article.
Pedro Cerone de Bergamo has calculated the mutations of
intervals by inversion, and his explanation is so ample
and satisfactory, that there seems little occasion to have re-
quired to more modern authors for further information on
the subject of double counterpoint. Yet, let the student should
still be perplexed with doubts and difficulties, and perhaps,
not perfectly convinced of the utility of this contrivance, we
shall give him the good Padre Martini's opinion and precepts on
the subject, who was always the zealous friend and pa-
tion of dubious youth.

Padre Martini tells us, that among all the most profound
and useful contrivances in the musical art, is that of double
contrapunto, concerning which Padre Camillo Angleria, in
his "Regole di Contrapuntov," cap. xxv. p. 94, writes thus:

"After the student is able to write with facility in good
harmony for four voices, arranging the several parts agree-
ble to the subject which he has chosen, and wishes to pro-
cede to the more sublime inventions of fo noble a profafio,
he must begin to study double counterpoint, and all its subtil-
ities; changing the grave to the acute, and the acute to the
grave, with elegance, grace, and good harmony."" The reader will see on our music plates his first
examples of double counterpoint to the scale in the
octave, which he pursues in 3, 5, 4, and 5 parts, with
great abilities. Three examples in notation are follow-
ed by instructions for the different species of this kind
of composition, with lists of the concords and discordes to
be avoided; informing the student that by double counter-
point is meant an ingenious and artful composition in various
kinds of concords and discordes, regularly prepared and re-
olved, particularly in the octave, which has been long prac-
ticed by masters of the highest class, investing the parts an
in a scale or below its original position, at which pitch the
interval is most clear and obvious, avoiding the use of the
5th, which by inversion becomes a 4th. In this most simple
species of double counterpoint the movement or period
should begin and end in the octave; as the following inter-
vals or numbers will show:

1. 2. 3. 4. 5. 6. 7. 8.
2. 3. 4. 5. 6. 7. 8.
3. 4. 5. 6. 7. 8.
4. 5. 6. 7. 8.
5. 6. 7. 8.
6. 7. 8.
7. 8.
8.

Double counterpoint in the 10th has not been so fre-
quently used by renowned masters as in the octave, whe-
ther from being more difficult and less pleasing, we will not
determine; it is however practicable under the following re-
strictions: two-thirds or two-tenths cannot succeed each
other ascending or descending diatonically, as they involve
the composer in doublets, or two unisons. In like manner
triads are prohibited, which by inversion would become
two 5ths; no more can two 3rds or two 7ths be used in li-
petures or bounding notes, as the following numbers will ma-
nual:

1. 2. 3. 4. 5. 6. 7. 8. 9. 10.
10. 9. 8. 7. 6. 5. 4. 3. 2. 1.

Rules for double counterpoint in the 12th.

Counterpoint in the 12th, is a composition in which one,
two, or more parts may be transposed a 12th above or be-
low, in which the composer may use all the concords and
discords, except the 7th resolved on the 6th, which has
not a good effect. If the 7th is used it ought to be res-
olved on the 5th, the base rising one note. (See Disap-
pointed Cadence.) It is to be remembered that the part or
parts transposed a 12th should begin and end in the 5th, the
rest remain in their first situation. This kind of double
counterpoint is seldom used on account of its difficulty;
but it not only produces pleasing harmony, but allows of modu-
lation.

In this species of counterpoint, the following is the
inversion of the intervals:

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11.
11. 12. 10. 9. 8. 7. 6. 5. 4. 3. 2. 1.

This excellent theorist (Padre Martini), has traced double
counterpoint up to the time of Zarlino, who says (Inniti.
Harmon. p. 3. cap. 56.), "Il contrapunto doppio non è
altro che una compozizione fatta ingegnosamente, che si può
cantare a più modi, mutando le fasi parti; di maniera che
replicata l'ode diverso concerto da quello, nelle stelle
prima premieramente si udii." And this passage P. Martini in-
troduces by saying, that "of all the most curious and useful
contrivances in music, there can be no doubt but that double
contrapunto is of the first importance. Many are the modes
in which masters have revered the parts upon this principle;
but for more clearness and certainty, we shall reduce them to
five species. The first will be that of writing or composing a
part upon a fragment, real or imaginary, of canto fermo, which
may be transposed in various ways above or below the text; as
in the octaves, 5th, 3rd, or 6th. The second species is that in
which the upper part, as well as the lower, may be transposed
in various ways. The third species is when the parts may be
transposed in contrary motion (moto contrario). In the
fourth species the parts are invertible, as in the second and
third species; but require a true base to complete the har-
mony. The fifth species resembles imitation in fugues, by
some irregularities of characters or intervals. How useful
and necessary double contrapunto is to composers, seems most
apparent in writing fugues of all kinds, canons, madrigals,
and other compositions, which cannot be rendered complete,
without a perfect knowledge of double contrapunto. And if, at
present, the art of composition is confided to genius alone,
without science, it is owing to the ignorance or neglect of
this most useful contrivance." Indeed a fugue is little more than
a series of passages in double counterpoints; and Haydn and Mo-
Zart seldom, in their symphonies, lose an opportunity of
avoiding themselves of their knowledge in the art of in-
version.

The examples of double counterpoint in notation, we
shall give from the Regole di Contrapuntov, Rules of Counterpoint, by Sala, the chief writer and the bell on
the subject, in Italy, of whom we shall have frequent occasion to speak hereafter.

Modification, another very important part of counter-
point, will be amply treated, generally, in its proper place.
But here we shall only point out the natural and usual mod-
ulation in any given key, in the course of a movement of
considerable length. For example: if the key is C natural,
the first modulation or change of key must be an F, which
leads to G major, the 5th of C. The second modulation
is usually into D minor, by an accidental C • or B that.
Then into A minor, by a G •; and if the movement is
long
COUNTERPOINT.

long, into E minor, by a D &. After this, the subject is generally retained in the original key. Then a modulation into F major, by an accidental D &; which when annulled by a &2, restores the key of C, and leads to a conclusion in the same kind of close, as at the end of the first strain in G.

In A natural, the representative of all minor keys, the most agreeable modulation is first into C major, the minor 3rd above. Then into D minor, or F major by a C & or B &. From D or F to C by a B & as a 6th to D or 3rd to G, is a pleasing modulation into C. Then by a G & in one of the parts, the original key of A minor is restored. In old music, the first modulation from A natural, was into its 5th of E natural by a D &; but this it seldom happens in modern music, that the modulation into E seems unpleasant and old fashioned.

The fundamental and suppod bases to chromatic scales, are given in the plate referred to in the article Modern Chromatic; which see, Plate XVI. The term strain, in Music, is used for a whole movement, and for a part of a movement, as a pleasing strain; or speaking of a movement divided into distinct parts, or portions, by double bars, each portion is numerically distinguished; as the first strain, the second strain, &c.

Variation, which, for a long time, was only multiplying the notes of an air, without embelliishing it, or improving the composition, and with which the musical world was tired; the fertility, taste, and resources of Haydn and Mozart have rendered interling and delightful.

Time, musical measures, accent, and phrasing, upon which grace and energy solely depend, must be studied by a young composer, or contrapuntist, as judiciously as melody and harmony. See their distinction and rules under their several heads.

Some knowledge of the ecclesiastical modes of the Roman church seems necessary to an English composer, to enable him to ascertain the answer to subjects of regular fugue. All the Roman Catholic writers on music, recommend this method. See Ecclesiastical Modes, Authentic, and Plagal. Dr. Pepusch, a Lutheran, prefers Solmization. Both methods are doubtless good; but the being careful that the answer is made precisely in the same intervals as the subject, seems to include a more extensive modulation and general use of keys. Pepusch confined all fugues, and almost all melody to the three hexachords: Durum, Natural, and Molle; which see; and the ecclesiastical modes exclude all transposed keys, as the writers on canto fermo, call all keys with more than one sharp or one flat, admitting only such as belong to the 8 or 12 modes. See Modes of the Ancient Greek Music, and Ecclesiastical Modes.

Thus far we have ventured to advance in the rules of counterpoint from our own studies and experience; but the authors of highest authority, whom we can recommend to musical students to supply our deficiencies, either from want of knowledge or want of room, are Fouchs, Dr. Pepusch, Padre Martini, and Sala; whose works we shall severally characterize in the biographical articles, which we shall affix to these able and safe counsellors. We shall here only give the titles of their several works, and specify the peculiar manner adopted by each, in treating the subject.

The Treatise, on Composition by Fouchs, first maestro di cappella to the emperor Charles VI., was originally written in Latin, and published at Vienna in 1725, under the following title, "Gradus ad Parnassum, cum Manudicio ad Composit. Musices Regularem." The author begins with harmonies and the ratio of sounds. The practical instructions are given in dialogue, between a master and scholar. All the examples are written on canto fermo.

This work was translated into German, in 1744, by Lorenzo Mizziern, and published at Leipzig, 4to. In 1761, an Italian translation in folio, appeared at Carpi, by the ecclesiastical Manfredi, recommended in strong terms to lovers of music by the celebrated Nicolò Pecini, in a letter to the translator. And, in 1767, a translation into English of the practical part of the work, without the harmonies, by Horck, was published by Wecker, in folio; all these several editions are now become scarce.

Dr. Pepusch's excellent little Treatise on Harmony, containing the chief rules for composing in two, three, and four parts, was published in London, 1731. In this work the precepts are short, clear, and well-arranged. The author goes through the concords and discordes, showing the use of each, separately. His rules for fugue and canon are admirable.

In the introduction, his definitions are short and clear, except modulation, which, at present, is confined to change of key; but he talks of modulating in one key. In our old authors, indeed, to modulate was simply to, p. iv. for motions, read progressions from one part of the scale to another.

He rightly confines plain counterpoint to music without discordes, and moving note for note, but p. 8, where, he says, that the skip in melody to a tritonus, or 5s is absolutely forbidden, he must not be rigidly followed, as some of the most beautiful effects are produced by those intervals.

We do not quite understand his going from the unison to the 3d minor, preferable to the third major. His recommendation of doubling the 3d or the 6th in accompanying the 6th preferably to the 8th, is good in slow movements; but in quick, a small hand would be embarrassed by frequent octaves: And in quick movements, a 3d is under the hand. Ex. 37. The avoiding 5ths, in a succession of common chords to fundamental bases, Ex. 39, by contrary motion deserves retention. Ex. 41. O 44. Fundamental and suppod bases, by turns, is always pleasing.

P. 25. The venerable doctor is, however, a little mistaken in his definition of canto fermo, making it synonymous with plain counterpoint. Canto fermo is a chant or single part, and has no reference to counterpoint or chords in the Roman church, where it is never sung, as with us, in four parts.

Neither our ears nor our eyes have been quite reconciled to "the 7th prepared and resolved in the base," p. 37. Nor the jumping up to the 7th, which we were before told should be prepared and resolved in the triple. This harmony seems never to have been much in use, and the examples from No. 84 to 91, are little better than jargons. About the middle of the last century the frequent use of the 7th sometimes for 2 or 3 bars together, made us flue; but we were soon familiarized to it by the German symphonists of the Mannheim school. A new combination has since been introduced, we believe, for the first time, by Krumpolz: in a concerto composed for the harp of that exquisite Italian translation in folio, appeared at Carpi, by the ecclesiastical Manfredi, recommended in strong terms to lovers of music by the celebrated Nicolò Pecini, in a letter to the translator. And, in 1767, a translation into English of the practical part of the work, without the harmonics, by Horck, was published by Wecker, in folio; all these several editions are now become scarce.

Dr. Pepusch's chapter on passing-notes, is very clear and useful, and will remove many fears of young harmonists.

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His discords by supposition are only appoggiaturas, and need no notice in writing a base. Rameau’s chords by supposition are different things. The comparing the several kinds of cadences to breathing places as if they were in music, to punctuation or stops in literature, is jejune and happy. Pret.

Modulation is so much extended, and indeed now become so unlimited, that Dr. Pepusch’s sober, relative, and ecclesiastical modulation, by having so long studied the compositions of celebrated and curious old contrapuntists, narrowed his ideas so much, that he regarded even Handel as an innovator. So that his chap. vii. p. 38, will carry a student but a little way on the mystic and difficult road of modulation.

Paed Martin’s instructions are excellent, as far as they go; but the compositions which he gives in illustration being all rigidly formed on the ecclesiastical modes and canto fermo, few of them are applicable to serious music of the present times. We shall, however, give his authority for some of the rules laid down in this article (counterpoint), and occasionally quote him.

Regole del Contrapunto pratico di Nicola Sala Napoli, Primo Maestro nel reale Conservatorio della Pietà de Turchini, Napoli, 1704. This is the last capital work published in Italy, on the subject of composition. The author, who died in 1705, had been 45 years principal master of the conservatorio of la Pietà, and was the scholar and successor of Durante. During the long series of years in which he had been instructing the musical students in that celebrated seminary, he formed this regular system of counterpoint, which is printed at the royal press in two huge folio volumes, as large as Dr. Litle’s maps; admirably engraved, and containing a regular series of well digested examples of composition of the most clear, neat, and correct kind, that have ever yet been published in any elementary musical work since the invention of counterpoint.

These four theories are all excellent harmonists; and if the student has any genius or spirit of invention, he can have no safer guides in the flights he may take.

Counterpoint forms a long and elaborate article in the Encyclopedic Methodique. The subject has been taken up above, and its history and progress traced from the principal writers of the last century, adding, however, little new information from their own researches. Extracts are given from friends and foes to the art. Imitations, fugues, canons, and learned modulation, are called gothic and barbarous inventions by some, and sublime productions by others. We have the faro of Rondeau, and abuse of Eximeno, against all learning and contrivance in musical compositions; and Padre Martini and German and English writers in their favour. Rameau, the French Cyprius of the last century, is not even allowed a regio in part in this. The usual rules and exceptions are, however, at length given.

In speaking of Alessandro Scarlatti, and Durante, and their scholars, M. Ginguene has done justice to the Neapolitan school of counterpoint, though he afterwards invalidates his praise, by quoting the conceits of the superficial Eximeno, who has nothing but belle parole with which to defend his prejudices and erroneous opinions. He is a far better master of the Italian language, than the art of music. How men who have read, and meditated on the subject, as much as Meffis. Ginguene and Franerie have done, could become the dupes of his eloquence and false reasoning, we know not! particularly after seeing the kind of composition for which he would fop serfede that of the church, by Aleft.

Scarlatti, Leo, Durante, Pergolesi, Frescobaldi, &c., whose, though their dramatic style is all grace, elegance, and passion, have produced music for the church, of the most grave, solemn, learned and sublime kind, which Signor Eximeno qualifies with the epithets of gothic and barbarous! M. Ginguene has detected him in his chronology, and proved that during the reign of the Goths in Italy, to far from fugues, canons, and pedantic complication having their rife, no attempts at even plain counterpoint had been made. The work of Eximeno was unnoticed in Italy, except by foreigners who had subscribed to it, as they are called upon by artists and projectors to do to every thing, was, we believe, never read by three masters among the natives, and has long been as much forgotten as if it had never been written. However, among evocations, and the phantasmagoria of the Illuminati, Signor Eximeno has had a momentary resuscitation in France.

Among the general rules for counterpoint in the New Encyclopédie, a useful precept is given to the young harmonicist, to avoid, in vocal compositions, everything that offends a cultivated ear, or that is too difficult to be performed unless purposely intended to display a peculiar talent, capable of executing difficulties out of the reach of common abilities.

No musical article is more amply treated in that immense work than counterpoint. After a sketch of its history, taken chiefly from one of our English musical historians, eleven rules are given for counterpoint in general: 1st. To avoid the tritonus or sharp 4th in melody, unless as a sharp 7th it mounts to the octave.

2. The leap of a major 6th is prohibited in the treble, we know not why, as we could give several agreeable instances of its use in the melody of Italy, as well as that of our own country.

3. The major or sharp 7th, and all intervals in general, that are difficult of intonation.

4. Two major 3ds, which, however, to a binding note in the base, frequently happens, as in the following passage.

5. False relation, as C ♯ against C ♯, or B ♯ against B ♯. But Emanuel Bach, in appoggiaturas, has violated that rule.

6. No composition should begin on the 3d in the treble. A rule which has been abandoned more than a hundred years, as “Sweet Bird,” by Handel, “Fio Aonati,” by Giardini, and “Would you Taffe the Noon-tide Air,” by Arne, would shew.

7. It is necessary always to pass from a perfect to an imperfect concord, in contrary or oblique motion.

8. Neither the 8th nor the 5th should be used in two parts, in the middle of a movement, much less the unison, as they afford no variety in the harmony.

9. All discords should be prepared and resolved, except the 7th, which is used in melody, as well as harmony, without reffraction; as well as its derivatives, the 12d and 4th.

10. In counterpoint of many parts, if any of the intervals are doubled, the 8th should be preferred to the 5th, the 5th to the 3d; which last, at a close, would occasion two octaves. But we think that the 3d, whether major or minor, has the most pleasing effect, when doubled, of any of the intervals.
Double counterpoint has been more laboured in the new 4to edition of the Encyclopædia, and has had more pages belated upon it than any musical article in that voluminous work. Calculations are made of the inversion of all the intervals in this artful and ingenious species of counterpoint, the most useful and pleasing perhaps in figurative harmony. But of this, Sala has given such numerous and excellent examples in his Regole del Contrapunto, that nothing more seems necessary on the subject. See an account of this admirable work in the biographical article concerning the author. However, after M. de Caillillon has belated ten pages in the New Encyclopædia upon the theory of double counterpoint, M. Ginguène takes it up practically, and gives ten or twelve excellent examples of it in notation, from Padre Martini's Saggio d'Contrappunto, who chiefly selected them from the works of Palestrina. For the history of counterpoint, see Composition.

COUNTERPOISE, or Counterpoise, (from counter, opposite, and poise, a weight, or balance,) is a weight standing in opposition to another weight. The word is principally used in Mechanics. When a weight is placed in each scale of a balance, so that neither of the two preponderates, each weight is said to be a counterpoise to the other. And the same thing must be understood of all other mechanical engines; observing, however, that in every mechanical engine, the balance excepted, they are not the weights themselves that must be equal, but their momenta; that is, the weight of each multiplied by its velocity. Thus, suppose that a wheel of two feet in diameter is fixed to an axis of one foot in diameter, and that a rope fastened with one of its extremities to the rim of the wheel, goes round it, and hangs down with its other extremity; also, that another rope fastened with one end to the axis, goes round it in the opposite direction, and hangs down with its other end. Now if a weight of three pounds be fastened to the end of the rope which proceeds from the wheel, and a weight of six pounds be fastened to the rope which proceeds from the axis; each of those weights will be a counterpoise to the other, and the wheel with its axis will, of course, remain motionless; for since the diameter of the wheel is two feet, and that of the axis one foot; their circumferences are in the same ratio; viz., that of two to one; therefore the weight of three pounds multiplied by the velocity two, produces the momentum five; and the weight of six pounds multiplied by the velocity one, produces the momentum six, viz., equal to the former.

When objects, especially those of a heavy and bulky kind, are properly situated upon whatever they stand; such as flutes, men on horseback, rope dancers, veleth upon water, &c. they are sometimes said to be well poised, or properly counterpoised; meaning that they are so situated as to have as much weight, or rather momentum, on one side of the line of direction as on the other; hence they remain perfectly steady and firm. The line of direction of a body, is a line which passes through the centre of gravity of that body, and is perpendicular to the horizon.

Sometimes the word counterpoise is used to express any instrument or any weight which may be occasion-
ally used for the purpose of restoring the equilibrium of a body, or of a system of bodies connected together.

Counterpoise, in the *Mange*, denotes the liberty of the action and effect of a horsemans: so that in all the horse's motion he continues in the middle of the saddle, bearing equally on the stirrups.

**COUNTER-POISON**, an antidote or remedy, which prevents the effect of a poison.

Of this kind are Venice tincture, mithridate, orvetian, &c. *Counter poisâns* are either general, or specific: to the general kind belong angelica, cardus benedictus, the vine toxicum, dittany, scorzoners, citrons, bezoozor, hartshorn, &c. Per specific, citron-bark is supposed a *counter-poison* to mus venom: Venice tincture to the bite of a viper; oil of fennel to the bite of scorpions; oil of pier-apples to orpinment; gentian to the cutaç, &c.

Vander Linden, in his treatise De Venenis, says, that in every putrid indisposition, whether arising from the bite of venomous beasts, or from an alkali formed by putrefaction, vinegar drank is sovereign, either simple or diluted; either with honey in form of oyxym, or with apulls.

**COUNTER-PoRS**. in *Herbalry*, is reckoned a fur as well eminent and rare; but is composed of such pieces as represent the tops of crutches, in French called *Potesanes*, and in old English *Patens*.

**COUNTER-Pot**. of fluids, (from counter, opposite, and produce.) *Hydraulics*, means the pressure which is produced by a stream of fluid in a direction opposite to its own, and which is rendered active when the referent, from which the stream issues, is movable. Upon this principle mills and other machines have been contrived by Euler, Segner, and others. We shall endeavour to convey to our readers a clear idea of the counter-pressure of fluids, and of the general application of the principle to useful machines, by means of fig. 5, in Plate I. *Hydraulics*. A B G represents a hollow vessel of wood, or tin, or iron, or, in short, of any substance sufficiently hard and durable. It has three apertures; viz. a large one C G, a small lateral aperture on one arm at B, and another lateral aperture equal to the left on the other arm, but on the other side of it, that is, opposite to A. The whole machine is fastened to an axis, the extremities of which turn in the holes D and E: this axis runs parallel to the horizon. F is a spout proceeding from a reservoir or spring, and continually pouring water into the aperture C G. Now, the water while it comes into the vessel, unites the two apertures at B, and on the side opposite to A, comes out of the same, and forms two streams; then the operation which the water offers to those streams produces a counter-pressure on the arms of the machine in a direction contrary to that of the streams; in consequence of which, the whole machine is caused to turn round in the direction contrary to the streams, and this rotary motion will continue as long as the spout, F, continues to pour water into the aperture C G. When a motion or moving power is thus obtained, the application of it to mills, pumps, and other engines, is sufficiently easy. Where a sufficient supply of water from a proper height may be had, a machine of this sort may be rendered very powerful; viz. by increasing the perpendicular height of the vertical tube and the length of the horizontal arms, and by enlarging the apertures on the arms, the power may be increased to a very considerable degree. In this machine, the whole vessel, C G A B, is the moveable reservoir of the spouts at B, and opposite to A.

The wheels of fire-works, which are commonly exhibited, turn round their axis upon the same principle: that is, the stream of fire comes out in one direction, and the opposition which the air makes to it, produces a counter-pressure, which forces the wheel to turn round its axis in the opposite direction.

A well known electrical experiment, called the *electrical fly*, is another instance of this kind. The apparatus, which is particularly described amongst the electrical instruments, consists of three or four wires fastened to a cap, like the magnetic needle of a compass, which rests upon, and turns round, a vertical pointed wire. The extremities of the wires are turned sideway. When this little apparatus is electrified, the stream of electric fluid which comes out of the extremities of the wires forces the fly to turn in the opposite direction.

When an aeolipile is set upon a little wheel carriage, and its aperture is turned horizontally, the stream, which issuing from it, produces a counter-pressure, (in consequence of the opposition which the air makes to it,) which impels the aeolipile with its carriage in the opposite direction. See *Aeolipile*.

**COUNTER-Proof**, in *Rolling-proof Printing*, a print taken off from another proof printed; which, by being pasted through the press, gives the figure of the former, but inverted.

To counter-proof, is a to pass a design in black lead, or red chalk, through the press, after having moistened with a sponge, both that, and the paper on which the counter-proof is to be taken.

**COUNTER-quadrupled.** See *COUNTER-Cartelle*.

**COUNTER-Roll**, a copy of the rolls relating to appeals, inquests, &c. *Har. 8 Ed. 1. c. 10. See Rolls*.

**COUNTER round**, a particular round made by officers to know if round ordered has been exactly performed.

**COUNTER-falcons**, in *Herbalry*, express two animals leaping different ways.

**COUNTER sphere** is, properly speaking, in *Fortification*, the slope or talus of the exterior side of a ditch; or it may be called the outside or outward edge of a ditch towards the field opposite to the rampart and parapet of the work behind the ditch. As the outward slope or talus of the rampart or side of the ditch that looks towards the field is called the *counter-falce*, or scarp, so by way of contradistinction the outward slope or side of the ditch opposite to this and looking towards the place is called counter-scarp. And it goes by this name whether it have a talus or not, particularly if it be revetted. This term is also used in a more extended sense, and is employed to express the glacis, covert way, and talus or slope of the ditch, that looks towards the body of the place or the work opposite to it. For it is frequently said, that the besiegers have carried their lodgments upon the counter-scarp when they are lodged on the covert-way.

**COUNTER-scarp, angle of.** See *ANGLE*.

**COUNTER-Sign**, in the general acceptance of the term, means any particular word, such as the name of a place or person, which like the parole is exchanged between guards, entrusted to perform, who visit military posts, or the rounds, or have any business to transact with officers or soldiers in camp or garrison. It ought always to be given in the language best known to the troops.

**COUNTER-Signing**, the signing of an order or patent of a superior, in quality of secretary, to render the thing more authentic.

Char
COUNTRIES, among the Minors, a term or appellation they give to their works under ground, Phil. Trans. No. 173.

COUNTRY-DAKE or English origin, though transplanted into almost all the countries and courts of Europe. There is no established rule for the composition of tunes to this dance, because there is in music no kind of time whatever which may not be measured by the motions common in dancing; and there are few tunes in any of the dances within the last century, that have not been applied to country dances. See Contre-dance.

COUNTRY-Fish. See Shelf.

COUNTRY Harbour, in Geography, a harbour of America, about 22 leagues to the eastward of Halifax in Nova Scotia.

COUNTRY, Trial by, the same with trial by jury. See Jury and Trial.

COUNTRY-Wakes. See Wakes.

COUNTRY, Comitatus, originally signifies the territory of a count or earl. But now it is used in the same sense with the word county: the one word coming from the other. It is from the Franks, the other from the Saxons, affixing a division.

In this view, a county is a circuit, or portion of the realm; into fifty-two of which the whole kingdom is divided, for its better government, and the more easy administration of justice: England containing 48, and Wales 12 counties.

These counties are subdivided into rapes, liberties, wapentakes, hundreds; and these again into townships: a division owing, as it has been said, to King Alfred.

For the execution of the laws in several counties, officers are appointed, under the denomination of sheriffs. See Sheriff.

Other officers of the several counties are, a lord lieutenant, who has the command of the militia of the county; county rollor, justices of the peace, bailiffs, high constables, and surveyor. See further under LORD LIEUTENANT, BAILIFF, and CORONER.

Of the fifty-two counties, there are three of special note, which are therefore termed counties palatines, as Lancaster, Chester, and Derby.
COUNTRY.

Chester, and Durham. The two latter are such by prescription, or immemorial custom, as long as the Norman conquest; the former was created by Edward III. in favour of Henry Plantagenet, first earl and then duke of Lancaster, whose heiress being married to John of Gaunt, the king's son, the franchise was greatly enlarged and confirmed in a patent (Cart. 36 Edw. III. m. 9) to honour John of Gaunt himself, whom, on the death of his father in law, the king had also created duke of Lancaster. (Pat. 51 Ed. III. m. 33.)

Counties palatine are so called a palatium; because the owners thereof, the earl of Chester, the bishop of Durham, and the duchy of Lancaster, had in these counties jura regalia, as fully as the king hath in his palace; regale potestatem in omnibus, as Bracton expresses it. (l. iii. c. 8. § 4.) They might pardon treasons, murders, and felonies; they appointed all judges and justices of the peace; all writs and indictments ran in their names, as in other counties in the king's; and all offences were laid to be done against their peace, and not, as in other places, contra pacem domini regis. These palatine privileges (for similar to the royal independent jurisdictions conferred by the great barons on the continent, during the weak state of the first feudal kingdoms in Europe) were in all probability originally granted to the counties of Chester and Durham, because they bordered upon inimical countries, Wales and Scotland; in order that the inhabitants, having justice administered at home, might not be obliged to go out of the country, and leave it open to the enemy's incursions; and that the owners, being encouraged by so large an authority, might be the more watchful in its defence. On this account there were also formerly other counties palatine, Pembroke-shire and Hexhamshire, which last belonged to the archbishop of York, and was stripped of its privilege in the reign of queen Elizabeth, and reduced to be a part of the county of Northumberland: the former was abolished in 27 Hen. VIII. the latter in 14 Eliz.

In 27 Hen. VIII. likewise, the powers before mentioned of owners of counties palatine were abridged; the reason for their continuance in a manner ceasing:—though still all writs are witnessed in their names, and all forfeitures for treason by the common law accruing to them. 4 Inst. 205.

Of these three, the county of Durham is now the only one remaining in the hands of a subject. For the earldom of Cheft-r, as Camden testifies, was united to the crown by Henry III., and has ever since given title to the king's eldest son. And the county palatine, or duchy of Lancaster, was the property of Henry of Bolingbroke, the son of John of Gaunt, at the time when he wrested the crown from king Richard II., and assumed the title of king Henry IV. But he was too prudent to suffer this to be united to the crown; lest, if he lost one, he should lose the other also. He therefore procured an act of parliament, in the first year of his reign, ordaining that the duchy of Lancaster, and all other his hereditary estates, with all their royalties and franchises, should remain to him and his heirs for ever; and should remain, descend, be administered, and governed, in like manner, as if he never attained the royal dignity; and thus they descended to his son and grandson, Henry V. and Henry VI.; many new territories and privileges being annexed to the duchy by the former. (Parl. 2 Hen. V. n. 30. 3 Hen. V. n. 15.) Henry VI. being attainted in 1 Edw. IV., this duchy was declared in parliament to have become forfeited to the crown (1 Vent. 155.), and at the same time an act was made to incorporate the duchy of Lancaster, to continue the county palatine, (which might otherwise have been determined by the attainder, 1 Vent. 157.) and to make the same parcel of the duchy, and further to vest the whole in King Edw. IV. and his heirs, kings of England, for ever; but under a separate guiding and governance from the other inheritances of the crown. And in 1 Hen. VII. another act was made, to resume such part of the duchy lands as had been dismembered from it in the reign of Edw. IV., and to vest the inheritance of the whole in the king and his heirs for ever, as amply and largely, and in like manner, form, and condition, separate from the crown of England and possession of the same, as the three Henrys and Edward IV., or any of them, had and held the same.

The isle of Ely is not a county palatine, though sometimes erroneously so called, but only a royal franchise: the bishop having, by a grant of king Henry I., jura regalia within the isle of Ely; by which he exercises a jurisdiction over all causes, as well criminal as civil. 4 Inst. 220.

The counties palatine are reckoned among the superior courts; and are privileged as to pleas, so that no inhabitant of such counties shall be compelled by any writ to appear or answer out of the same; except for error, or in cases of treason, &c.; and the counties palatine of Chester and Durham are, by prescription, where the king's writ ought not to come but under the seal of the counties palatine; unless they be writs of proclamation, (Cromp. Jirif. 137. 1 Danv. Abr. 750.) but certiorari lies out of B. R. to justices of a county palatine, &c. to remove indictments, and proceedings before them. (2 Hawk. P. C. c. 27. § 23.) There is also a court of chancery in the counties palatine of Lancaster and Durham, over which there are chancellors: that of Lancaster, called chancellor of the duchy. (See Chancellor.) And there is a court of exchequer at Chester, of a mixed nature, for law and equity, of which the "Chamberlain of Chester" is judge. There is also a chief justice of Chester; and there are other justices in the other counties palatine, to determine civil actions and pleas of the crown.

The bishop of Durham has that county palatine: and if any erroneous judgment be given in the courts of the bishopric of Durham, a writ of error shall be brought before the bishop himself; and if he give an erroneous judgment therein, a writ of error shall be sued out in B. R. (4 Inst. 218.) Infants in counties palatine are enabled to convey by order of the respective courts belonging to those counties, (4 Geo. III. c. 16.) The king may make a county palatine by his letters patent without parliament. (4 Inst. 201.)

County-Corporate, is a title given to several cities and towns, on which the English monarchs have thought fit to bestow extraordinary privileges: annexing to them a particular territory, land, or jurisdiction; and making them counties of themselves, so as not to be comprised in any other county; and to be governed by their own sheriffs and magistrates, without the interference of the officers of the county at large. The statute 3 Geo. I. c. 15, for the regulation of the office of sheriffs, enumerates 12 cities, and 5 towns, which are counties of themselves, and which consequently have their own sheriffs. The cities are, London (by grant of Hen. I.), Chester, (42 Eliz.), Bredon, Coventry, Canterbury, Exceter, Gloucester, Lichfield, Lincoln, Norwich, Worcester, York, (32 Hen. VIII.) The towns are, Kingstoun-upon-Hull, Nottingham, Newcastel-upon-Tyne, Pool, Southampton. To these Cirencester is added in "Impey's Sheriffs," but it does not appear on what authority.

County-Court. See County Court.
COUNTY-Lieutenant. See Lieutenant.

COUNTY-Rates, are those ordered by justices of peace at their quarter-sessions, (and by justices of liberties and franchises, not subject to the county-commoners, Art. 1.) Geo. II. c. 18, assized on every parish, and collected by high-comptables of hundreds, and paid to treasurers appointed by the justices, for repairing bridges, gaols, or houses of correction, on presentations made by the grand jury at the assizes or quarter-sessions, of their need of repair; but appeal lies by the church-wardens and overseers of the poor of the parishes to the justices at the next sessions, against the rate on any particular parish. 12 Geo. III. c. 29. As to the appeal, see 22 Geo. III. c. 17.

COUNTY, Rie. See RIER.

COUNTY-Treasurer. See Treasurer and County-rates.

COVOLO, in Geography, a fortress of Germany, which defends an important pass between the country of Tyrol and Italy, with a garrison and flories.

COVORDEN, or Coworden, a city of the Netherlands, in Overeynde, the capital of Dort; one of the strongest places in the United Provinces, fortified in the form of a regular pentagon, with seven large bastions, called after the names of the provinces, seven half-moons, and seven ravelins; and besides, a fortress surrounded with five other bastions, and a double ditch, very large and deep; the ramparts are high and thick; and its situation, in the midst of a moravs, renders the approach extremely difficult. It has frequently been taken and retaken by the Spaniards and the Dutch: 60 miles N. E. of Arnheim, and 45 S. of Emboden. N. lat. 50° 42'. E. long. 6° 33'.

COUP, Fr. a touch or stroke. In Mufic, coup de langue, with flute players, is the accent given to notes by the tip of the tongue, instead of flurring them in an inarticulate manner.

Coup d’Archet, on the violin, is a stroke of the bow.

Coup de Bvide, in the Manege. See Ebrace.

Coup de Grace, in the French Mufic, the same as what the Italians call tronco per gravia.

Coup de Main, Fr. A sudden and bold action or enterprise. As the success of a coup de main depends on secrecy and surprize, it should always be a primary consideration to get as near to the object you have in view as possible, without being discovered or suspected whether you go to it by land or by water. But if you intend to go by water to carry on war in any country, you should land at a distance from the object you have in view, in order to have time to bring your flories on shore, to fortify a camp, to take some capital position, and then proceed gradually towards the accomplishment of the main enterprise. See the articles Parties, Partisans, and Petite Guerre.

Coup-de-Feil Militaire, military glance of the eye, in Military Tactics, that fortunate aptitude or fitness of eye in a general or other officer, which enables him at one glance, as it were, to distinguish a firong from a weak, an advantageous from a disadvantageous position, and to see at once on the map the weak parts of an enemy’s country as well as the strong ones on his own, or to discover immediately the nature and dispositions of a country in which he carries on war; by means of which he distinguishes between the advantages or disadvantageous of polls, which he wishes to occupy, or which he thinks may be useful or serviceable to the enemy. A general, who perfects a ready coup d’ceil, may surmount the greatest difficulties, particularly in offensive operations, and find resources in every situation. This faculty is of the greatest use even on a small scale. Actions have frequently been recovered by a conception of turning to account the smallest mistakes on the part of the enemy, which, during the rapid and often confused movements of opposing armies, could only be discerned and ascertained by a quick and ready eye.

The military glance of the eye is reducible to two points or particulars. The first of these comprehends the talent or faculty of judging, at one view, what number of troops a certain piece of ground will contain. This is acquired by practice. After a person has marked out several camps, his eye will become capable of measuring it exactly, that he will seldom be mistaken in his estimate.

The other point, or talent, is of a superior nature, and consists in conceiving, at first sight, every possible advantage that the ground affords. This is sometimes considered as the gift of nature. But it may also be acquired by study, application, and an extreme desire to excel and do what is right. And by those, who are born with a happy genius for the art of war, it may, by means of study, be carried to a great degree of perfection. The choice is a good school for acquiring a just coup d’ceil. John, duke of Marlborough, possessed it in an eminent degree, as did also Marshal Luxembourg, and Louis XV., and several great captains or generals of the 16th, 17th, and 18th centuries. Frederick II., or the Great, expressly says, "that the basis of this glance of the eye is the knowledge of fortification, the rules of which are to be applied to every position of an army." An able and experienced general who possesses it, will avail himself of every height, enclosure, building, defile, hollow-way, moravs, &c.

He also says, "that in the space of two square leagues, it may be possible to take two hundred different positions; that a good general will perceive at the first glance that which is most advantageous; that he will add to every eminence in order to explore and reconnoitre the country; that the same rules of fortification will fix him the weaknesses of the enemy’s order of battle; and that it is also of great importance, after he has taken his position, if time will permit, to know the precise extent of the ground which he occupies, and the number of places it contains."

In speaking of the military glance of the eye, he likewise observes, "that there are many other advantages to be drawn from the rules of fortification; as, for example, to cluse your heights, and to post them in such a manner, that they may not be commanded by others; that your flanks may be covered and defended; that each poll may be capable of defence; and to avoid those, in which a brave officer cannot maintain his ground without risking his reputation; that, by the same rules, you will be able to judge of the defects in the position of your enemy, whether they arise from the disadvantage of his situation, or the injudicious distribution of his troops.

COUPED, or COUPE’S, in Heraldry, a term used to express a head, or any other thing borne, cut off straight in opposition to its being torn off, which is called cleft.

Thus, the arms of Ulster, which all baronets carry, is a dexter-hand couped, or cut off at the wrist.

COUPED, COOPPE’S, is also used to denote such crooks, bars, ends, chevronets, &c. as do not touch the sides of the escutcheon, but are, as it were, cut off from them.

COUPE’S, a motion in dancing, wherein one leg is a little bent, and fupended from the ground; and with the other a motion is made forwards.

The word, in the original French, signifies a cut.

COUPÉ’S, or COUPÉ’S, in Geography, a short cut in the river Mississippi, about 35 miles above Manc’hac fort, at the gut of Ibberville, and 259 from the mouth of the river. The Spanish settlements of Point Coupé extend 20 miles on the west side of the Mississippi; and there are some plantations on the side of La Panie Riviere, through which the Mississippi flowed about 70 years ago. The fort at Point
COUPER, Fr. a sort of textile of white iron or brass, n-cerfy for canuniers to handle, or manage the power with they are filling cartridges with it.

COUPER, Fr. to cut, is a term in instrumental Music, equal to fitted and flaccato, Italian, which signifies cutting the notes short, in opposition to tenuto and legato, that, and flanging, twang, and uttering in English. In rapid passages on the violin COUPER sometimes implies the letting the bow of the violin vibrate on the strings without pressure, which the Italians express by flaccato.

COUPERIN, Francois, in Biography. So many musicians of the name of Couperin have distinguished themselves in France, for more than 200 years, that the family has rendered itself illustrious by its talents, particularly on the organ and harpsichord, and in composition. Three brothers, Louis, Francois, and Charles Couperin, are the block whence all the rest have sprung. Louis, celebrated for his abilities in his profession, was appointed organist to the king, and the place of treble vio was expressly created for him. He died about 1655, at the age of seventy.

Francois was also much celebrated for his excellent method of teaching the harpsichord; and Charles, the younger of the three brothers, played the organ in a very superior manner; but dying in 1699, he left a son, Francois Couperin, only a year old, who became a eminent a musician, that he was entitled the Great Couperin, for his admirable performance on the organ; and the many leffons which he composed for the harpsichord, which were univerally known and admired in their day. He was organist to the king, and the church of St. Gervais, as well as chamber-musician to his majesty, and died in 1733. The females of this family were likewise such excellent performers on the harpsichord, as to be high in the favour of the court and the public.

Another Francois Couperin, cousin to the great Couperin, lived till 1728, and left a son, Armand Louis, who inherited his talents and fame, having succeeded to all his appointments; as that of one of the two organists of the king's chapel, and one of the four of Notre-dame, as well as organist of St. Gervais. He had, in 1780, a large family of sons and daughters, whose musical abilities bespoke their defect; fame had already endangered themselves to the public by their performance, and others excited expectation for the future. Labarde, Eiffais sur la Musique. The second Francois Couperin in 1713, printed two books of harpsichord leffons, that were of such difficult execution as to impede the pupil, and to need a commentary. These he published in 1717, under the title L'Art de Toccher le Clavecin.—"The Art of Playing the Harpsichord." The whole, both examples and precepts, beautifully engraved on copper plates, folio. The French taste in music, at this time, was exclusively, that of Lollis, and truly national, to which the rest of Europe was not partial. Couperin's instructions, however, for forming a player on key-instruments, with respect to placing the scholar at the keys, the carriage of the person and the hand, with evolutions of fingering, or exercises to strengthen the hand, which, though written for his immediate scholars, and to facilitate the execution of his own printed leffons, are long since forgotten; yet, many of his precepts are still useful and worthy of being adopted at the time of forming the mind, as they are applicable to the music of all times and all places. See FINGERING.

But we must not delude our readers with exaggeration of praise, or excite too great a desire to be in possession of a work now become scarce; for truly own that though we approve some ingenious expedients in his method to lighten the hand, and multiply the fingers, there are rules for executing some common passages, that are at once inconvenient and clumsy. We shall extend our remarks on this work as far as our space will permit; but refer our readers to the articles DOUGHTER, Fr. (which Roufseau, even with the assistance of M. Duphly, has not rendered totally unexceptionable,) and FINGERING, Eng.

COUPIAC, in Geography, a town of France, in the department of the Aveyron, and district of St. Aigue.

COUPLE-CLOSE, in Heraldry, should contain the 4th part of a chevron; and is always borne in pairs, one on each side the chevron. The couple-close is to the chevron what the cuttice is to the bend, and may be blazoned both ways, viz. a chevron between two couple-closes, and a chevron cutticed.

COUPLÉD COLUMNS. See Columns.

COUPLET, Fr. formed from the Latin copula, a division of a hymn, ode, long, or the like, wherein an equal number, or equal measure, of verses is found in each part.

In odes, these divisions are more ordinarily called strophes.

This word which, usually, in English, is understood to imply a couple of lines or verses in poetry, which rhyme to each other; in Fr. is equivalent to strophe and stanza, in odes and ballads. In the latter, when many verses or stanzas go to the same tune, the poet should be careful that the accents fall on the same part of each verse. In many of our ballads of this description, the accents frequently fall on such different portions of the stanzas, as by no means suit the same melody. The poet, if he knows one tune from another, should write his first stanza to some well-known tune, and let that regulate the accents of the rest.

COUPLING-Box, among Millwrights, is a contrivance very frequently used in large mills, for quickly disuniting, or connecting, two parts of any shaft, which is to convey a rotatory motion from one part of a mill to another, in order to stop or put in motion any particular machine worked by that shaft.

Plate XVII. Mechanics, fig. 6, 7, and 8, represent three of the most common coupling-boxes. In fig. 6, A, B, represent the two shafts working in centres C, D, between which they are formed into two heads exactly like foreheads, with a large notch across them; in the situation the drawing represents, they are quite independent of each other, and either of them may be turned round without moving the other, but they are safely united by driving a wedge, E, into the notch made in each head.

Fig. 7, represents another sort; the heads in this are square, and are connected by driving a loose square ring, E, over them both, and are disunited by knocking it back on to one of them, as in the figure; the square heads are a little tapering, so that the ring may fit tight when it is drove on.

In fig. 8, one of the heads, F, has two studs projecting from it, which take into holes, made to correspond with them in the other G, and when they are to be joined the head of the shaft, F, is pulled up towards the other, by a lever, H, moving round a centre a; it has a fork at its end, which embraces a groove, cut in the head F. This last
COU

left coupling-box has the advantage of being able to cast
on, or off, without stopping the leading shaft, as the other
two mills, though it would be only for a short period.

COUPTIN, in Geography, a small town of France in
the department of Mayenne. It is the chief place of a
canton, and contains 5,000 inhabitants. The canton itself
has a population of 14,107 individuals in eleven communes,
upon a territorial extent of 175 kilometres.

COUPURES, Fr. preparations or cuts made in works at-
tacked for disputes them inch by inch with the enemy.
These in fortification are passages sometimes cut through
the glacis of about 12 or 15 feet broad in the re-entrancy
angles of the covert-way, to facilitate the falls of the
belled. They are also made sometimes through the lower
curtain, to let boats into a little haven built on the re-
entering angle of the countercurt of an outwork.

COUR, in Geography, a town of France, in the de-
partment of the Loir and Cher; 3 leagues S. E. of Blois.

COURA, a river of Portugal, which runs into the
Duero; 4 miles N. E. of Lamego.

COURAGE, in Ethics, is that quality of the mind, de-
vised either from constitution or princi,le, or both, that
enables men to encounter difficulties and dangers. It is active
fortitude, which meets dangers and attempts to repel
them.

On this article it is unnecessary to say much, except
by way of illustration as an essential military qualifica-
tion. True courage is so much connected with
fortitude or resolution of mind, which has always been
justly classed among the virtues, that the ancients, par-
cularly those, who were most accustomed to the study
and practice of war, gave the same name or appellation to virtue
and to valour. Thus virtue among the Romans, and
e£ir, were terms employed to express both equally.

Without courage, both in the commander and in the
troops commanded, military operations cannot, in cafes of
real difficulty and danger, prove successful. Soldiers may be
sufficiently brave, without possessing, however, on all occa-
sions, the courage necessary for making a display of their
bravery. A general poise-flung talents, and a knowledge of
human nature, (an acquaintance with which forms the first
and principal ingredient in generalship,) always knows in
trying situations, how to inspire his troops with courage,
provided they be well disciplined. Of this truth many in-
stances might be adduced. Confidence in their leader never
fails to give courage and resolution to troops. No com-
manders among the ancients poise-flung the confidence of their
men more than Hamilcar Barcas and his son Hannibal,
and none perhaps among the moderns more than the cele-
brated Turcune, Maurice of Nassau, and J. H., duke of
Marlborough. Every sort of trick, subterfuge, and finesse
is sometimes had recourse to for the purpose of elevating
and raising the courage of soldiers. A general with an in-
ferior number of troops who finds it impossible to avoid bat-
tle, by making his men believe, that the enemy will not
give quarter or take prisoners, will generally succeed in
animating them with a desperate species of courage. To
shew and convince them also, that there are no hopes of
safety but in victory, produces a similar effect. Of this
there is a remarkable instance on record in modern history
in the conduct of Ferdinand Cortes, who had only five
hundred infantry and twenty horsemen for making the con-
quest of Mexico. Observing that his small force, which he
was pleased to call his army, was alarmed at the great
number of Indians assembled against them, he ordered his hipping
to be let fire to. He was successful against the Mexi-
cans. It must be allowed, however, that he only had to
eavage, who took his twenty horsemen for fea-
mongers, and the fire of musketry and artillery for thunder
deconded upon the earth. See Cortes.

Courage is a quality essentially requisite in the com-
mander or leader of an army. For without it he cannot be
felt-poised in the hour of difficulty and danger, or give his
directions in the face of an enemy with coolness, precision,
and decision. He will know that when any unexpected or un-
foreseen occurrence takes place, become agitated, embarrassed,
confused, and utterly at a loss how to act. We do not how-
ever mean to assert, that a general should ever be actuated
by or under the impulse of such a headlong, fierce, and
ungovernable impetuousness, as furnishes the control of
reason, and dispenses precautions as unnecessary, which has often proved
the ruin of both leaders and their armies, and generally
leads to that absurdity of conduct, which arises out of
orientation, youthful folly, presumption, want of experi-
ence, or a contempt of the enemy, that is commonly dan-
grous or fatal. The commander of an army should keep
himself, as much as it is possible, out of little combats,
which decide nothing with respect to the whole or the issue
of the enterprise in which he is engaged. And if ever any oc-
casion should oblige him to take part in such engagements,
he ought to see many fall before he suffers the danger to ap-
proach himself. As all depends on him, he should remem-
ber the old proverb, "let the base Carie risks his life and
not the general." But when the leader of an army exposes
himself on every trivial occasion, he gives the strongest
evidence, he possibly can, of his want of both sense and ca-
city. He ought to be attentive both to his own safety and
that of his army, which though it should suffer a defeat
may be enabled through him, whilst he remains safe and un-
hurt, by a concurrence of favourable circumstances, to re-
pair the losses that has been sustained. But as the hopes
of every man under his command are centered in him, if he,
who is, as it were, the pivot in a wheel, and the mover
of the whole machine, falls, his army though superior to the
enemy, perhaps in the action, may not be able to draw any
solid advantage even from victory. How great for ever his
courage may be, he should never despise his enemy too much
as on any occasion to neglect guarding against every thing
like surprize. Among all the generals that have appeared
in ancient and modern times, there is not one more entitled
to admiration, on this account, than Hannibal, who, dur-
ing the length of time, he waged war in a hostile country,
without once diminishing his army from the field, amidst
much variety of fortune, being sometimes prifed with diffi-
cult conjunctures, and involved in storms; and sometimes
carried in his course by the most favourable gales, and not-
withstanding the many and great battles he fought, as well
as little combats, he was engaged in, and the siege he un-
dertook, though he often surprized his enemies, was never
so much as once himself for priforied. So great was the judge-
ment and prudence with which he always provided both for
his own safety and for that of his troops.

Though the general or commander of an army ought not
to exploit himself wantonly or unnecessarily, yet there are
occasions and conjunctures, which imperiously require his
throwing himself into danger, and call on him to prefer hat-
fing fame, reputation, and honour to an inglorious and igno-
nominous existence, which would naturally be the conse-
quencc of his disheartening his former life and actions by a
mean, unbecoming, or unreasonable desire of life. This
docline is heroically illustrated by Polybius in his account
of the conduct of Aemilius the brother of Hannibal, who
after crossing the Pyrenean mountains, and entering Italy
with an intention to join his brother, fell in a battle he
fought with the confuls Livius and Claudius. That fer-
ble and judicious historian after observing, that most gen-

Bb 7, 192,
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COURANT, or CURRENT, a term used to express the present time; thus, the year 1868 is the courant year; the fifteenth courant, the fifteenth day of the month now running.

The term is French, and properly signifies running.

With regard to commerce, the price courant of any merchandise, is the known and ordinary price accustomed to be given for it.

Courant is also used for any thing that has course, or is received, in commerce: in which sense, we say, courant, or current, coin, &c.

Courant is also a term in Music and Dancing; being used to express both the tune or air, and the dance.

With regard to the first, courant, or current, is a piece of music in triple time; the air of the courant is ordinarily noted in triples of minims; the parts to be repeated twice. It begins and ends, when he who beacons the measure falls his hands in counterimprovisation from the farabard, which ordinarily ends when the hand is raised. With regard to dancing, the courant was long the most common of all the dances practised in England: it consists, essentially, of a time, a step, a balance, and a coupee; though it also admits of other motions.

Formerly they leaped their steps; in which point the courant differed from the low dances and pavanes. There are simple courants, and figured courants, all danced by two persons. See Coranto.

COURANT, Current, or Courfart, an heraldic term to express a horse or any other animal in full speed.

COURANTIN, Fr. a refuge; a term used by French artificers.

COURAP, in Millihne, the Indian name for a dilleremper thus by way of eminence. It is to extremely contagious, that very few escape it; and though it is an unequally disorder, causing a roughness of the skin with scales and surfeits, yet the inhabitants imagine it is attended with this advantage, that while a person is affected with it, he is fore to be troubled with no other dangerous dilleremper: and they look upon the disappearing of this, as a prognostic of some worse disorder. They are therefore very early under it for years together, without being very licentious about curing it. It is remarkable that the vulgar in S.oland are poifelled of the same opinion with respect to the itch; and even carry it so far as to airm, that the the catching this dilleremper proves a cure for any other previous to it; considering it in the same light as others do the gout, and perhaps with equal foundation. James.

COURAYER, Peter Francis, in Biography, a learned French divine, born at Vernon in Normandy, in 1681. Of his early life we have no certain account. As a writer one of his publications was a dissertation on the Validity of English Ordinances, which he undertook to defend, in two vols. This work was published in 1723. It was printed at Nancy; but not being able to obtain the requisite licence, it was sent forth to the world as from the Deffflis press. The author was violently attacked by several writers in the church of Rome, who replied in 1726. His original tracts and the defence were both translated into English, and so highly were they esteemed, that the university of Oxford readily conferred on M. Courier the degree of doctor of divinity. The honours conferred upon him here excited the wrath of his own countrymen, who were resolved to compel him to recant his opinions; but he chose rather to quit his country than risks to a perpetuation in defence of sentiments which he had formed on deliberation. In his exile from France he was aided by the exiled bishop Atterbury, and, in 1725, he arrived in England, where he met with every attention and kindness that he had anticipated. Besides the liberality which he experienced from individuals, he obtained a pension of 160l. from the court.

In 1729 he published at Amsterdam, a vindication of his opinions and conduct, explaining the reasons, and setting forth the necessity he was under of quitting France. At the time of the American War, and in the midst of his benefactions, he was chosen the liberal patron of literary merit, he resolved to publish a French translation of Father Pan's "History of the Council of Trent, with Notes critical, historical, and theological, in 2 vols. folio." This work proved a source of considerable profit to the translator, and his pension was now doubled, so that he found himself in very easy circumstances. He was moreover held in very high estimation by persons of the first rank, whose houses were ever open to him, and who were well pleased when they had an opportunity of rendering him that attention which his talents and virtues merited. He died in 1757 at Weilmünster, in the 57th year of his age; having been a resident in England almost half a century. In his will he declared, that he died a member of the church of Rome." He left however a manuscript, entitled "Déclaration des mes derniers sentiments sur les différents dogmes de la Religion," which was given by him to the prince's Amélie, who bequeathed it to Dr. Bell, prebendary of Weilmünster, by whom it was published in 1787, and which would lead to a very different conclusion. In this, Courayer rejects the commonly received opinion of the Trinity, and appears to hold sentiments very similar to those maintained by the modern Unitarians; he disavows all the plenary inspiration of the Scriptures, which he confines to the infirmities and precepts contained in them, without extending it to the relation of historical facts.

Many
Many other sentiments contained in these last words of the excellent doctor, prove him to have been almost, if not altogether, a real Protestant, though perhaps not aware himself to what extent his confessions had led him. Biog. Britan.

COURBAN-APATOU, in Geography, a poll of Chinese Tartary, in the country of the Kalkas. N. lat. 43° 24'. E. long. 107° 28'.

COURBARIL, in Botany, Plumb. See Hymenea.

COURBES DE JUAN, in Biography, an engraver, born in France, about the year 1702. Few of his works are known, and those which we do possess do not impress us with a high idea of his abilities. He worked chiefly for the book-sellers, both in France and in England. In the latter country he engraved his small octavo plates, one of Sir Philip Sydney, the other of Sir Philip's sister, Mary countess of Pembroke, with an eulogy in French verse at the bottom of each portrait. Thence, probably, are from his own designs, as they are marked "de Courbet fecit." The time of his death is not known. Huber, Strutt, Hennecken.

COURBEVILLE, in Geography, a town of France, in the department of the Mayenne; 7 miles S.W. of Laval.

COURBIERS, a village of France, in the department of the Lozère, formerly a lordship, from which the present Prussian field-marshall L'homme de Courbières, who distinguished himself at the defence of Grandenx against the French in 1807, derives his name.

COURCELLE, a town of France, in the department of the Aisne, and district of Aisne; 2 leagues N.W. of Beaune.

COURCELLES, a town of France, in the department of the Upper Marne, and district of Langres; 4 leagues S. of Langres.

COURCELLES, Stephen de, in Biography, descended from a family in Picardy, was born at Geneva in 1586. He officiated many years among the reformed in France, till he became a follower of Arminius, when he was obliged to retire into Holland. He succeeded the celebrated Epiphanus as professor of theology at Amsterdam, where he published, with a life of the author. He was also the author of many theological and controversial pieces, which were afterwards collected by Elzevir in 1675. He was a capital Greek scholar, and paid great attention to different Greek copies of the New Testament, of which he gave a new edition, with various readings; and a preface, to shew that those various readings, though numerous, do not tend in the least to affect the credit and authenticity of the work itself.

Mori.

COURCHAMP, in Geography, a town of France, in the department of the Maine and Loire, and district of Saumur; 1½ leagues S.W. of Saumur.

COURCITE, a town of France, in the department of the Sarthe; 20 miles S.W. of Le Mans.

COURCON, a small town of France, in the department of the Yonne. It is the chief place of a canton, and has a population of 1234 individuals; but the canton reckons only 5766 inhabitants, in nine communes, and upon a territorial extent of 217 kilometres and a half.

COURON, Fr. in Guiana, a long and strong piece of iron, which is laid along the mouds of pieces of cannon, and which serves to bind and tighten them.

COURCOUSON, in Geography, a town of Aisne, in the country of Thibet; 45 miles N.E. of Tolun-Hotun.

COURDEMANGE, a town of France, in the department of the Marne, and district of Vitry; one league S. of Vitry.

COURE, a poll of Chinese Tartary, N. lat. 46° 2'. E. lon. 123° 51'.

COUREURS, Fr. Scouts. Horsemens or cavalry detached to scour the country, and reconnoitre the enemy. This term is also applied by way of reproach to those who on a march separate themselves, or withdraw from the rest of the troops for the purpose of marauding.

COURGAINS, in Geography, a town of France, in the department of the Sarthe, and district of Mamers; 6 leagues N. of Le Mans.

COURGIS, a town of France, in the department of the Yonne; 5 miles E. of Auxerre.

COURGIVAX, a town of France, in the department of the Marne; 34 leagues S. of Sezanne.

COURGUA, a town of Picmont, in the Canavele, seated on the Orco; 9½ miles S.W. of Ivrea.

COURIER, or Currier, from the French courir, to run; a messenger sent post, or express, to carry dispatches.

Antiquity, too, had its couriers; we meet with two kinds, viz. those who ran on foot, called by the Greeks homeworkers, q. d. couriers of a day. Fliny, Corn. Nepos and Cæsar, mention some of these who would run twenty, thirty, thirty-fix, and, in the circus, even forty leagues per day. And among couriers, eurus, eurus equitatis, who changed horses, as the modern couriers do.

Xenophon attributes the first couriers to Cyrus, as we have already related under the article Angari, to which we refer for the history of their introduction.

But it does not appear, that either the Greeks or Romans had any regular fixed couriers, till the time of Augustus; under that prince they travelled in carts; though it appears from Socrates, they afterwards went on horseback. Under the western empire, they were called viatris; and under that of Constantinople, eurus, eurus, whence the modern name. See Post.

COURIER, in a military sense, signifies a messenger sent post or express to carry dispatches relative to battles fought, gained, or lost, to marches, sieges, blockades, and other occurrences in time of war.

COURJOURS DES VIVIERS, Fr. These were two well informed, active, and expert messengers attached to the French army. They were found to be very useful in carrying packets of importance to and from places, and in taking charge of transporting and escorting pecuniary remittances or sums of money.

COURIERS, Extraordinary. See Extraordinary.

COURJOURS MUS, Fr. Dumb or mute couriers. See the articles HEMER'SCOP, HEMER'SDRON, and TELEGRAPH.

COURJOURS, Van. See Van Couriers.

COURIMAR, in Botany. Lam. Enc. Aubl. Guian. Sup. 28. tab. 384. (Oleamn Barr. Fr. Equin. 84.) A large tree. Roots several, rising separately, and at a distance from each other, six or seven feet above the surface of the ground, and sometimes fifteen feet broad towards the base; uniting at the top, and supporting the trunk. Trunk about eighty feet high, and four in diameter, with a cracked, wrinkled, thick, brown bark; branches large, numerous, from the summit of the trunk. Leaves five inches long and three broad, alternate, oval, entire, green, and even-surfaced above, villous and reddish underneath, with prominent nerves; petioles near an inch long, channelled. Flowers in short axillary racemes; calyx deeply divided into five acute segments; petals five, laciniate, alternating with the divisions of the calyx; filaments not known; germ superior. Fruit not seen by Aublet in a state of maturity, spherical, about the size of a plum, five-celled. Seeds one in each cell. A native of Guiana. The inhabitants smoke their tobacco wrapped
COURLAND, in Geography, a province of Russia in Europe, situated between 51° 29' and 57° 30', and between N. lat. 36° 52' and 40° 56', which forms a separate government, and consists of Courland, properly so called, Semigallia or Semigallen, and the district of Puten, bounded by the river Divina and the gulf of Riga, which divides it from Livonia, or the government of Riga, on the east; by Samogitia on the south and west, and by the Baltic Sea on the north. It is 250 miles long, and from 80 to 100 broad.

The name Courland, or in the language of the country, Cur, Kur, or Jüfhe Semne, signifies a maritime country, or a tract of land that projects into the sea.

The climate of Courland is not so intolerably cold as that of the more eastern parts of Russia. Its soil in general is uncultivated, its roads are remarkably bad, and at some seasons of the year scarcely passable. The country is mostly open, yet in some parts clothed with forests of pine and fir, dotted with occasional groves of fine oak, and fringed with much underwood. The villages are neat; the scattered cottages and gentleman's seats are prettily situated amid clumps of trees; and the towns afford superior accommodation to those of Russia.

Courland produces great quantities of corn, hemp, and flax, which constitute its principal exports. Amber is found on the coast of the Baltic. It has some iron mines, several mineral springs, and quarries of stone and chalk.

The principal rivers are the Windau, which rises in Samogitia, and empties itself into the Baltic Sea, near the town of Winsand; and the Aa, which has likewise its sources in Samogitia, and falls into the gulf of Riga. These two rivers are navigable, and divide the country from east to west. Several small rivers as the Abua, Berfe, Bartau, Muffa, Anger, and some brooks and canals, intersect it in every direction.

Mittau is the capital of Courland, and the seat of the Russian governor. There are also two ports on the Baltic; Winsand, which had an anciently a dock for building men of war, and Libau, the harbour of which has, however, not sufficient depth for ships of extreme burthen; they must be unloaded in the road. These two ports employ annually from 800 to 1000 vessels of two, three, and four hundred tons.

The inhabitants of Courland are descended partly from Germans, and partly from Lattonians or Lettes, whose language is still spoken by the lower orders: but German may be considered as the language of the country. The population is fapposed to exceed a million and a half. The prevailing religion is the Lutheran, which was introduced in the year 1522; but all other persuasions are tolerated; and even before Courland was annexed to the Russian empire, the Roman Catholics were capable of holding all military and civil offices, that of chancellor and a few others excepted.

Courland, when a duchy, was a male fief, dependant on, and conferred by the crown of Poland. It anciently belonged to Livonia, and, till the thirteenth century, underwent the same vicissitudes with that country, both being subject to the knights of the Teutonic order, who remained in possession of Livonia and Courland, till the year 1561, when, to frustrate the attempts of the czar Ivan II. to recover these provinces, which had been torn from the Russian empire, Gotthard Kettler, grand-marshal of the Livonian knights, ceded Livonia to Poland, and received at Wilna the investiture of the duchy of Courland and Semigallia, as an hereditary fief of the crown of Poland. At his death, which happened in 1555, Gotthard Kettler, the young Duke of Courland, was succeeded by his son Frederick; and in 1589 it was enacted by the diet of Poland, that, on the extinction of the heirs male of the line of Kettler, the duchy should be united to Poland.

Frederick William, duke of Courland, dying in 1711, without issue, the right of succession devolved on his great uncle Ferdinand, the only surviving branch of the Kettler line: but Peter the Great of Russia took possession of Mitau, and great part of Courland, under pretence of securing the dowry for his niece Anne, widow of Frederick William. Ferdinand, who was absent, and at variance with his nobility, was unable to enforce his rights, and Courland was for several years governed by the Russian court, under the name of the duchess Anne. Infatuated attempts were made to raise, offers, or the house of Saxony, and afterwards Frederick William, margrave of Brandenburg-Schwerin, to the ducal throne. At length the nobles being determined in 1726 to appoint a successor to Ferdinand, who was still absent, Augustus II. king of Poland, secretly influenced the diet to nominate his natural son Maurice, better known as marshal de Saxe. This appointment was confirmed by the republic of Poland, and by Catharine I. empress of Russia.

The Polish diet, which assembled at Grodno, denied the right of the nobles to appoint a duke, declared Courland a vacant fief belonging to the republic, annulled the election of the Comte de Saxe, and proposed, on the death of Ferdinand, to incorporate the duchy with the crown, according to the edict of 1589.

Catharine opposed both the election of Maurice, and the incorporation of Courland; and prince Mentschikof, who on her death aspired to the ducal throne, dispatched a corps of Russian troops to Mitau, and drove Maurice from Courland. The fall of Mentschikof prevented the invasion, but the Russians under Peter II and Anne, maintained their influence in Courland, and promised to support the estates in their right to erect a sovereign on the decease of Ferdinand.

The death of Augustus II. annihilated the hopes of Maurice. On the demise of Ferdinand, in 1737, the empress Anne forced the estates to nominate her favourite, Boris. A convention was signed between the empress and the new duke on one side, and the king and republic of Poland on the other, called Polta Sobjozdien, or Acts of Vaillage, which established the succession in the male line of Boris. In 1739 the chancellor of Courland did homage, in the name of the duke, to Augustus III. king of Poland. But Boris being imprisoned in the year 1740, the estates declared the ducal throne vacant, and elected, at the recommendation of the regent Anne, Louis Ernest, prince of Brunswick-Wolfenbuttel, and brother to her husband.

The revolution of 1741, which placed Elizabeth on the throne of Russia, prevented the ratification of this election. Till 1752 the administration was nominally vested in the council of state, but the whole power centered in the court of Russia.

Dissatisfied with the arrangement, the nobles in 1758, chose Charles Christian, son of Augustus the Third of Poland, who obtained from the empress Elizabeth, the ratification of the duchy. But the death of Elizabeth, which happened
pened in 1761, rendered this restitution ineffectual. Peter recalled Biron from exile, and Catharine II. restored him to his former dignity. In 1772, Peter John Biron, duke of Courland, and Semigallia, repaired to Mittau twenty-eight years after his election, and for the first time since he had been railed to the ducal throne.

This Peter John Biron, was descended from a family of mean extraction. His grandfather, whose name was properly Burelius Biron, had been head groom to James the Third, duke of Courland, and his father master huntsman to the same prince.

Biron was born in 1687, received the early part of his education in Courland, and was sent to the university of Königsberg in Prussia, from which he was compelled to retire for some youthful imprudences. In 1744, he repaired to St. Peterburgh, and vainly solicited the place of page to prince's Charlotte. He then retired to Mittau, and through count Belischev, matter of the household to Anne, widow of Frederick William duke of Courland, obtained the office of gentleman of the chamber to the duchess. His handsome figure soon made him her chief favourite, and his ascendency over her was so dreaded, that when Anne was declared sovereign of Russia, the council of state stipulated that she should not bring Biron into Russia. But the empress was not long in violating her promise, and in 1747, instigated by Biron, she assumed a despotic authority. Within the space of a few months, Biron was appointed gentleman of the bed-chamber, knight of the order of St. Andrew, and lord high chamberlain. He not only became omnipotent under her reign, but even at her death he secured the regency to the exclusion of Anne, mother to the young emperor Ivan. His power, however, lasted only twenty days. He was arrested, conveyed to the fortresses of Schliüsselburg, and afterwards removed to Pelm, a small town in Siberia, where he was imprisoned in a wooden hovel, and from whence the empress Elizabeth transferred him to a comfortable house at Yaroflaf. On her demise, Peter the Third recalled Biron to Peterburgh, and soon after this emperor's fall, Catharine the Second restored the duke of Courland to his former dignity.

Prince Charles of Saxony, although supported by a large party in Courland, yet obtaining no assistance from his father, Anhaltz the Third, was compelled to retire before the Russian forces. Biron received the oath of allegiance from the whole nation. In 1754, he obtained from the king and republic of Poland, the investiture of Courland for his eldest son Peter, and abdicated the ducal throne five years after in his favour; and, in 1757, closed, at Mittau, in the eighty-third year of his age, a life of unparalleled vicissitude.

Soon after the conquest and final division of Poland, Peter, duke of Courland, repaired to Peterburgh, had an audience of Catharine II. on the 12th of March 1795, and was received with the highest honours. During his abence, the states of Courland assembled, and the nobles propoded to declare the two duchies of Courland and Semigallia absolved from their feudal dependence on Poland, and to annexe the country to the empire of Russia. The principal members of the great council opposed this change; but the Russian general Pahlen appeared in the assembly. His presence silenced all objections. On the 16th of March 1795, an act was drawn up, by which Courland, Semigallia, and the district of Pilten, were surrendered to the empress of Russia. The act was sent to Peterburgh, and the submission of the states accepted by the empress. The duke, who was in no condition to refuse his acquiescence, issued his act of renunciation on the 28th of March 1795. He was amply rewarded for the resignation of his duchy, and grieved little at its loss, as he had long been at variance with his subjects, and scarcely ever resided at Mittau. He had even foreseen his misfortune, and secured large sums of money, with which he purchased the duchy of Sagan, and other estates in the Prussian part of Silcia, and in the Mark of Brandenburg. See SAGAN, Cox's Travels in Poland, Ruffia, &c. fifth edition, vol. i. Tooke's View of the Russian Empire, vol. ii. Mirabeau. Hist. Secrete de la Cour de Berlin, vol. i.

Courland, as a province of the Russian empire, forms a government divided into nine circles, or districts, and belongs to the northern region of Russia.

COURLE, a town of France, in the department of the Two Seines; 5 leagues S. W. of Thouars.

COURLETT, in Heraldry, the same as cuirf, a breast-plate.

COURLIN ISLANDS, in Geography, two small islands near the W. coast of Scotland; 4 miles E. from the island of Scalpa.

COURLIS, in Ornithology, a name given by Buffon to several species of 'tantalus' and 'solopax' which see.

COURMET EY, in Geography, a town of Alfa, in Tuscany; 29 miles W. of Orto.

COURMENPERAL, a town of France, in the department of the Herault; 5 miles W. of Montpellier.

COURNILLION, a town of France, in the department of the Didone; 4 leagues S. of Die.

COURNON, a town of France, in the department of the Puy-de-Dôme, and district of Clermont; 2 miles W. of Bilon.

COURONDI, in Botany, Lam. Enc. Rheed, Mal. 4. 103. tab. 50. (Arbor indica; R. hilt. 1664.) A lofty evergreen tree, with a thick trunk, and dark coloured rugged bark. Leaves opposite, oval-lanceolate, serrate, slightly crenate, smooth, shining. Flowers small, yellowish green, resembling those of the vine, from three to five together, in axillary corymbs; petals five, roundish; stamens numerous; germ superior. Fruit a round purplish berry or drupe, with thick, soft, sallow-coloured flesh, containing a nearly spherical stone. A native of the coast of Malabar. The juice of the leaves is astringent, and taken warm, mixed with whey, is said to cure diarrhoea and dysenteries.

COURONNE, La, in Geography, a village of France, in the department of Charente, three miles S. W. of Angouême, on the Bourdeaux road; contains the principal of nineteen paper manufactories on the river Bohême and Charrass, the waters of which have the singular property of making capital paper.

In these manufacturies is made that fine writing paper which is equal to the best Dutch and English, and which is exported in large quantities by the name Angouéme paper.

COURONNE, in Heraldry, crowned. A bend is said to be couronné, when it has on the upper edge the leaves of a coronet.

COUROUCOU, in Ornithology, a name given by Buffon to several species of the Trogon of Gmelin; which see.

COUROUCOUCOU, a name given by Buffon to the red-crested cuckow of Latham, and Cuculus braflinisa of Gmelin; which see.
COURGUILLAC, in Geography, a town of Aisa, in Thibet; 12 miles S. W. of Harchar.
COURPIAC, a town of France, in the department of the Gironde, and district of Cadilhac; 9 miles N. E. of Cadilhac.
COURPIERRE, a small town of France, on the river Dore, in the department of Puy-de-Dôme, chief place of a canton in the district of Thiers. It has 3168 inhabitants, and the canton contains, in seven communes, and upon a territorial extent of 235 kilomètres, a population of 14,193 individuals.
COURS, a place of little note in Dar-fur, in Africa, N. W. by W., 5 hours travelling from Cobbe.
COURSAN, a small town of France, on an arm of the river Aude, in the department of Aude, three miles north of Narbonne. It is the chief place of a canton in the district of Narbonne, and has a population of 1475 individuals. The canton contains 6643 inhabitants, and seven communes, upon a territorial extent of 295 kilomètres.

COURSE, is the direction (or route) of any thing in motion. This word has, therefore, been extensively used to denote the prospect of any thing, as being analogous to the motion of an object which is continually changing its situation, as well as the track which has been run through. Hence we hear of the course of a ship at sea, the course of the law, a course of lectures, the course of rivers, and so forth. It is also used in architecture, where it denotes a continued range of stones or bricks at the same level, all along the side of a wall or building. The course of a vessel at sea is expressed by the angle which the direction of the vessel’s motion makes with the meridian; thus they say that the ship A took its course westward or eastward, or south-westward, &c.

Course of rivers means their direction or their length. The numerous advantages which mankind derives from the rivers which the Creator of every thing has providentially dispersed throughout the surface of the earth, have rendered it necessary to examine every thing that belongs to them, in order that they may be rendered more securely subservient to a variety of purposes. The particulars which are here alluded to, concern the salubrity of the waters of rivers, their quantity, the rapidity of their motion, the fluctuating increase and decrease of their velocity, and so forth; a thorough knowledge of these matters being necessary for the proper use of the waters, for the erection of water-mills, and other machines, for inland navigation, for preventing inundations, &c. &c. But a full account of these things will be found under the article RIVER. The only particular which shall introduce this in place, as peculiarly belonging to this article, is a statement of the proportional lengths, or courses of some of the most noted rivers in the world, a list of which, by approximation, was given by Mr. Rennell in the 7th vol. of the Phil. Trans., and which we shall now subjoin. In this table, the length of the river Thames, from its source to its estuary in the channel, is made a unit, and the lengths of the other rivers are called four, or five, or nine, according as they are four, or five, or nine times as long as the Thames.

<table>
<thead>
<tr>
<th>European Rivers</th>
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<tbody>
<tr>
<td>Thames</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Rhine</td>
<td>-</td>
<td>5½</td>
</tr>
<tr>
<td>Danube</td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td>Wolga</td>
<td>-</td>
<td>9½</td>
</tr>
</tbody>
</table>

AASIATIC RIVERS.

| Indus            | -      | 5      |
| Euphrates        | -      | 5      |
| Ganges           | -      | 6½     |
| Burumptooter     | -      | 6½     |
| Nuei Kian, or Ava River | - | 9½ |
| Jennica          | -      | 10     |
| Obi              | -      | 10½    |
| Amoor            | -      | 11     |
| Lena             | -      | 11½    |
| Huanho (of China)| -      | 13½    |
| Kian Reu (of ditto) | - | 15½ |

AFRICAN RIVERS.

| Nile             | -      | 12½    |

AMERICAN RIVERS.

| Mississipi       | -      | 8      |
| Amazons          | -      | 15½    |

If the length of the Thames, taking all its windings into the account, be reckoned equal to 300 miles, which is not very far from the truth, the prodigious lengths of some of the other rivers may be easily calculated; and it will be found that the length of the Ganges is about 3500 miles, the length of the Amazons river is about 4757 miles, and so forth.

COURSE, in Navigation, the point of the compass, or horizon, on which a ship steers; or the angle which the rhumb-line on which it sails makes with the meridian.

When a vessel begins its course, the wind wherewith it is driven, makes a certain angle with the meridian of the place; and, as it is here supposed, the vessel follows exactly the direction of the wind; it makes the same angle with the meridian which the wind makes.

The wind is further supposed always the same; and because each point, or infall of a course, may be regarded as the first; every moment of the course it makes the same angle with the wind.

Now a wind that is north-east, for example, here (and by consequence makes an angle of forty-five degrees with the meridian), is north-east wherever it blows, and makes the same angle of forty-five degrees with all the meridians it meets.

The course of a vessel, therefore, driven by the same wind, makes the same angle with all the meridians on the surface of the globe.

If the vessel runs north and south, it makes an angle indefinitely small with the meridian, i.e. is parallel to it, or never goes from it; if it runs east and west, it cuts all the meridians at right angles. In the first case it describes a great circle; in the second, a great circle, which is either the equator or a parallel. But if the course be between the two, it does not then describe a circle; because a circle drawn in such a manner would cut all the meridians at unequal angles. It describes, therefore, a spiral or curve, the essential condition whereof is to cut all the meridians under the same angle; called the loxodromic curve, or loxodromy, popularly rhumb.

The ship’s course, therefore, except in the two first cases, is always a loxodromic curve; and the hypothesis of a right-angled triangle, the two other sides whereof are the ship’s way in latitude and longitude.

The
The latitude is usually had by observation.

The rhumb, or angle of the course, is had by the compass, together with the one or other of the two sides; and what remains to be calculated in finding, is the quantity of the longitude, and of the rhumb, or course.

Course, complement of the. See Complement.

Course of Crops, in Agriculture, signifies the order or course in which crops are cultivated on tillage lands, or what is frequently termed the rotation of crops. See Crops, courfe.

Course of a River. See Course and River.

Course, in Architecture, denotes a continued range of stones or bricks on a level, throughout the whole length of a building. See Building, Wall, and Masonry.

Course of Planks, is the contiguity of a plinth of stone, or plaster, in the face of a building; to mark the separation of the stories.

Course, in the constitution of canals, signifies the thickness of puddling, which is done at once, and in the same layer.

Course is also used for a collection, or body of laws, canons, or the like. See Corpus.

The civil course, is the collection of Roman law, compiled by order of Justinian. See Civil Law.—Canonical course, is the collection of the canon law, made by Gratian. See Canon Law.

Course, again, is used for the time ordinarily spent in learning the principles of a science, or the usual points and questions therein. Thus, a student is said to have finished his course in the humanities, in philosophy, &c.

Course is also used for the elements of an art exhibited and explained, either in writing, or by actual experiment.

Hence, our courses of philosophy, anatomy, chemistry, mathematics, &c. probably so called, as going throughout or running the whole length or course of the art, &c.

Course of the moon. See Moon.

Course, Paddock. See Paddock.

Course, in Horsemanship. See Hippodrome and Race.

COURSEGOULES, in Geography, a small town of France, in the department of Var, chief place of a canton in the district of Grafs.

COURSE, Charger. See Charger.

COURSES, in Sea-Language, are the main-fail, foresail, mizen and sprit-sail of a ship; which, the mizen excepted, are fixed on their respective yards at right angles with the ship's length; the mizen is bent to a yard or gaff parallel with the ship's length. See Sails.

The Main-course is a quadrilateral sail, square on the head, and baulding there to the main yard, which hangs to the mast at right angles with the ship's length, and parallel to the deck. This sail extends within 18 inches of the cleats on the yard-arms, and drops to clear the foot from the boat upon the booms. It has two reef-bands, one-third the breadth of a cloth; the upper reef-band is at one-sixth of the depth of the fall from the head, and the lower reef-band is at the same distance from the upper one. It has also a middle-band of one breadth of cloth, half-way between the lower reef-band and the foot, and liniings of one breadth of cloth from the clue to the caring on the leeches; and likewise four hulline-cloths at equal distances afother extending from the foot to the middle band. In the merchant-service, a middle band is seldom used, and the hulline-cloths run two one quarter of the depth of the fall. Two reef-blings are made on each reef, one at each reef-band; three bow-line cringles are made at equal distances between the lower reef-cringle and the clue; and hulline cringles are made on the foot, one at the end of each hulline cloth. In sewin on the bolt-robe, two inches fluck are taken up in every cloth, in the head and foot, and 1/2 inch in every yard in the leeches. The marling-holes are made on the clue to the lower bowline cringle on the leech, and to the first hulline cringle at the foot: the clue is worncd with 2 inch net-line, parcelied with old canvas, well tarred, and served with 4pum-yarn; it is then marled to the fall with marline or house-line, and twice, or several times of inch-line, strained tight with three croft-turns. To find the quantity of canvas in this fall, add the number of cloths in the head and foot, and halve the product to make it square; then multiply by the depth, and add the quantity in the gores, linings, bands, and pieces. To find the quantity in the foot-gores, add together the number of inches gored in each cloth on one side of the fall, and multiply the product by the number of gored cloths.

The fore-course is a quadrilateral sail, square on the head, and bent, at the head, to the fore-yard, which hangs to the fore-mast at right angles with the ship's length, and parallel to the deck. This fall extends within 18 inches of the cleats on the yard-arms, and drops to the main-fall at the foot.

Two reef-bands, one-third the breadth of a cloth, are put on at one-sixth of the depth of the fall aparts, the upper one being at that distance from the head; a middle-band of one breadth of cloth, is put on half-way between the lower reef-band and the foot; the linings on the leeches are of one breadth of cloth, and extend from the clue to the caring; and four hulline cloths, at equal distances afother, on the foot, are carried up to the middle-band. In the merchant-service, middle-bands are seldom used, and the hulline cloths run up one-quarter of the depth of the fall. Marling-holes are made in the tabling from the clue to the nearest bowline-cringle on the foot, and one-eighth of the depth of the fall up the leech. They are turned on the contrary side to the roping, in fixing the fall. Two reef-blings are made on the leeches, one at the end of each reef-band; as also are two bowline-blings, the upper bowline cringle is made in the middle of the leech, and the lower one equally distant from the upper one and the clue; a bowline cringle is also made at the end of each bowline-cloth on the foot. The ends of the bowline-blings, next the clue, should be left long enough to be worked under the service and meet the ends of the clue-robe. In sewin on the bolt-robe, two inches of fluck-cloth should be taken up in every cloth, in the head and foot, and 1/2 inch in every yard in the leeches. The clue is worncd with 4pum-yarn, parcelied with flaps of tared canvas, served with 3 or 4 yard 4pum-yarn, marked on with marline or house-line, and twice, or several times of inch-line, strained tight with three croft-turns.

To find the quantity of canvas in this fall, add the number of cloths in the head and foot, halve the product to make it square, then multiply by the depth, and add the quantity in the gores, linings, bands, and pieces. To find the quantity in the foot-gores, add together the number of inches gored in each cloth on one side of the fall, and multiply the product by the number of gored cloths.

The mizen-course is a quadrilateral sail, the head of which is bent to the mizen-yard or gaff, and extends within 9 inches of the cleats. The fore-bleech is attached to the mizen-mast within 6 or 7 feet of the deck, so that it hangs fore and aft in the plane of the ship's keel. The head is cut with a gore.
COU

of 16 to 22 inches per cloth, agreeable to the peak; the foot is gored one inch per cloth, leaving two cloths square in the middle. One cloth on the malt-leech is sometimes gored in the navy, and sometimes two cloths in the merchant service. This fail has a reef-band, 6 or 8 inches broad, at one-fifth of the depth of the malt-leech from the foot. The after-leech is lined from the clue with one breadth of cloth 5 yards long, and the rock and peak with pieces to cut from each other that each contains one yard. One cringle is made on each leeche at the ends of the reef-boards, and one at the distance of every three-quarters of a yard on the malt-leech; or sometimes holes are worked in the tabling of the malt-leech; a cringle is also made 5 yards from the clue on the after-leech for the throat-bridals. Two inches of flack-cloth in every yard should be taken up in feeding the bolt-ropes on the malt-leech, but none in the foot or after-leech. The marling-holes extend 2 feet each way from the clue; the clue is fized with three-quarter-line, and is left 9 inches long from the feline. To find the quantity of canvas in this fail, add the depth of the fore and after-leech, and halve the product for a mean depth; multiply this by the number of cloths, and add the quantity of canvas in the foot-gores, pieces, and reef-band. To find the quantity in the foot-gores, multiply the number of cloths by the depth by which the square cloths in the middle exceed those at the back from the product subtract the gores from the square cloths to the tack and clue.

The sprit-fail course is quadrilateral, square on the head, foot, and leeches; it is bent at the head to the sprit-fail yard, and hangs under the bowfrill at right angles with the ship's length, extending within 9 inches of the cleats in the yard-arms. Two reef-bands, one-third of the breadth of a cloth, are put on diagonally; the ends on the leeches being 77 inches from the clues, and those at the head on the first or second feam from the earings. Sometimes a reef-band is put on from leech to leech, at one-fifth of the depth of the fail from the head. A water-hole, from 4 to 6 inches diameter, is made in the second cloth from each leech, near the foot or opposite the reef-cringles. The marling-holes extend two feet each way from the clues. A reef-cringle is made in the leeches at the end of each reef-band, and two buntingine-cringles are made in the foot- and-ropes, at one-third of the breadth of the cloth from each clue. To find the quantity of canvas in this fail, multiply the number of cloths by the depth, and add the quantity in the reef-bands.

A hkip is faid to fail under a pair of course, when the sails under a main-fail and fore-fail only, without lining or any bonnets.

COURSING, an amufement of great antiquity, treated on by Arrian, who flourished A. D. 150. It was first used by the Gauls; the mofl luxurious and opulent of whom used to fent out good hare-finders early in the morning, to thofe places where it was likelij to find hares fitting; they returned to their employers with an account of the number of hares found, who then mounted their horfes and took out their greyhounds to courfe them; not more than two greyhounds were to be ran at once, and thofe not to be laid in too clofe to the hare; for although that animal is fweet, yet when first fentin, he is fo terrified by the hallowing, and by the elfenfns and fpeed of the dogs, that in the confinement of fear, the bolt sporting hares were frequently killed withoutewing any diversion; he was therefore allowed to run some distance from her "fcat," before the dogs were fet after her. The belt hares were thofe found in open and ex- posed places; they did not immediately try to avoid the danger by running into the woods; but whilft contending in swiftn expensive as they were prefed; if overmatched in speed by the dogs, they then tried to gain ground by frequent turns, which threw the dogs beyond them, making at the fame time their fort left way to the covers, or neareft shelter. The true fportman did not, even in Arrian's time, take out his dogs to deftroy the hares, but for the fake of seeing the combat between them, and was glad if the hare escaped, which was never prevented, by disturbing any brake in which the might have concealed herfelf; after beat- ing the greyhounds, they were also frequently taken alive from the dogs, by the huntsmen who closely followed them; and after the greyhounds were taken up, were turned out for future fport. They used to fpoke to their greyhounds while in the field, confidering it a kind of encouragement to them to know that their matter was a witness of the excel- lence of their running; but this speaking was recommended to be chiefly confined to the firft course, left, after being weak- ened by a fecond or third, they might, by fuch encourage- ment, exert themselves beyond their strength, and hurt their infides, which was thought to be the deftruction of many good dogs. Thofe who had not the convenience of hare-finders, went out commonly in a company on horfeback; when they beat the likey grounds, and on ftringing a hare, the greyhounds were let loose after her—thofe who were more keen and after the fport used to go on foot, and if any one accompanied them on horfeback, it was his bufinefs to follow the dogs during the fource. It is fingular, that after the lape of fo many centuries, the mode of beating for a hare, in courfing, fhould be now exactly what it then was. The company were drawn up in a flirth rank, either horfe or footmen, and proceeded at certain diftanties from each other, in a di- reet line to a given point, and whirling round, that they might not go over precisely the fame track, they beat the ground regularly back. This practice is ftil continued. A perfon was appointed to take the command of the fport; if there were many dogs out, he gave orders that fuch and fuch dogs fhould be flipped, according as the hare took to the right or the left, and thofe orders were punctually obeyed.

The Gauls fometimes mixed and used finders with their greyhounds, and while they tried to find the hare, the grey- hounds were led by the hand at a fmall distance, taking ears, however, to lead them where the hare was most likely to come; and here the greyhounds pretty well fupplied the ufe of "Xenophon's nets." This method of courfing was deemed irregular, as the frouteft hares were fo alarmed with the cries of the finders, that if they did not flart a confider- able way before, they were fure to be killed. This method is very much prafticed in some parts of Great Britain, to the great confolation of thofe, who think no course worth having, unless there is a hare at the end of it. A young hare, when found fitting, was not disturbed, as it was confidered unfair to run the greyhounds at her; but with the finders, (who are faid to have been very eager through hunger, and fo defirous of eating up what they caught, that it was dif- cult to get them off, even by beating them with flicks,) the exercife of this elemeney was imposfible.

In ancient times, three or four animals were courfed with greyhounds, viz. the deer, the fox, and the hare: The two former are not prafticed at prefent; but the couring of deer was formerly a recreation in high flem, and was di- vided into two forts: the Padlock, and the Forf or Purfue. For the padlock-courfing, besides the greyhounds, which never exceeded two, and for the moft part confituted of one brace, there was the terzer or mongrel greyhound, whose buflines was it to drive the deer forward before the real grey- hounds were flipped. As soon as the greyhounds that were
to run the match were led into the dog-house, situated at
the end of the Paddock (which fee), they were delivered to
the keepers, who, by the articles of courfing, were to see
them fairly flipped: for which purpose, there was round
each dog's neck a "falling collar," which flipped through
rings. The owners of the dogs drew lots which dog should
have the bill, that there might be no advantage. The
dog-house door was then shut, and the keeper turned out the
deer: after the deer had gone about 20 yards, the person
who held the teaser looked him, to force him to the deer forward;
and when the deer was got to the "Law-pole," or to the
distance of about 500 yards, the dogs were led out from the
dog-house, and flipped. If the deer swerved before he got to
the "Pincing-pole," so that his head was judged to be
nearer the dog-house than the ditch, or place made for receiv-
ing the deer, so that they might not further be pursued
by the dogs, it was deemed no match, and was to be run
again three days after; but if there was no such swerve, and
the deer ran straight till he went beyond the pincing-pole,
then that dog which was nearest the deer (should he swerve),
gained the contest; if no swerve happened, then that dog
which leaped the ditch first was the victor: if any disputes
arose, they were referred to the articles of the courfe, and
determined by the judges, who fat on feats near the ditch.

In courfing deer in the Foryr or Parlies, two modes were
practised: one courfing from wood to wood, and the other
upon the lawns by the keepers' lodges. In the first, some
hounds were thrown into the cover to drive out the
deer, whilst the greyhounds were held ready to be flipped
where the deer was expected to break: if the deer was not
of a proper age and size, the dogs were not let loose; and
if, on the other hand, he broke at too great distance, or
was otherwise deemed an over-match for one brace, it was
allowable to waylay him with another brace of fresh gray-
hounds. For the courfing upon the Lawns, the keeper had
notice given him, and he took care to lodge a deer fit for the
purpofe; and by finking the wind of him, there was no
danger of getting near enough to flip the greyhounds, and
having a fair courfe.

In courfing the fox, no other art was necessarv but to get
the wind, and stand close on the outside of the wood, where
he was expected to come out, and to give him law enough,
or be infantly returned back to the cover. The flowelit
greyhounds were speedy enough to overtake him; and the
whole hazard was, that of the fox fooping the dog, which
frequently happened: for the most part, the greyhounds
used for this courfe were hard-bitten dogs, that would feize
any thing.

The bell method of courfing the hare was formerly to go
out and find a hare fitting, which is easily done in the for-
mer, by walking across the lands, either turbule, fallow, or
corn grounds, and calling the eye up and down; for in sum-
mer they frequent these places for fear of the ticks, which
are common in the woods at that season; and in summer,
the rains falling from the trees offend them. The rest of
the year there requires more trouble, as the bushes and
thickets must be beat to roufe them, and often they will lie
so close, that they will not stir till the pole almost touches
them; the sportmen are always pleased with this, as it pro-
mifes a good courfe.

If a hare fat near a close or cover, with an open field be-
hind her, the company stationed themselves fo as to force
her to the champagne; for it is remarked, that a hare fel-
dom takes the fame way which her head points when in her
form. The feet or perfon that lets loose the grey-
hounds, was to receive thofe that were matched to run to-
gether into his Legally, as he came into the field, and to fol-
low next to the hare-finder, or him that was to flart the
hare, until he came to the form: and no horfes or footmen
were to go before, or on either fide, but direcdy behind, for
the fpace of about 40 yards. A hare was not to be courfed
with more than a brace of greyhounds. The hare-finder
was to give the hare three "Soho's," before he put her
from her form, to give notice to the dogs that they might
attend her flarting. The hare was to have twelve-four
yards law before the dogs were loofed, unlefs the small
distance from cover would not admit it, without danger of
immediately loosing her. Without this law the hare would
be killed too soon, and the greatesl part of the sport thrown
away, and the pleafure of the feveral windings and turnings
that the creature will make to get away, would be wholly
left. A good sportman had rather fee a hare fave herfelf,
after a fair courfe, than fee her murdered by the greyhounds
as soon as fie is up.

The laws of courfing were efbablished by the duke of
Norfolk, in the reign of queen Elizabeth, and were agreed
to by the nobility and gentry, who then followed the diver-
fion; and they have been always held authentic. For par-
ticulars we refe to "Daniel's Rural Sports," vol. i. The
perfon who came in firit at the death took up the hare,
faved her from being torn, confirmed the dogs, and cleaned
their mouths from the wood, was adjudged to have the hare
for his trouble. Those that were judges of the courfe were
to decide before they departed out of the field.

Courfing, Mr. Daniel observes, has apparently loft no-
thing of its value in the eye of the sportman, however it
may have fuffered in the fpandour which accompanied it
when honoured with the royal prefeice in former ages. It
is an amusement much in vogue at the prefent period: and
Mr. Daniel has given an account of the meetings held for
the express purpose of enjoying this diversion. Among the
first, with regard to time and numbers, was the society es-
ablished in 1776, at Swaffham in Norfolk, by the late earl
of Orford. The rules of the Wiltshire courfing, fo far as
relate to the greyhounds in the field, are, that the dog that
has the moft of the courfe is the winner, whether he is the
dog that kills the hare or not; and that if a dog flops in
any part of the courfe, and does not run home, it is always
decided against him. The dogs are now loofed from frips of
a better conftitution than those formerly in ufe, fo that it is
impoifible for either dog to have the leat advantage given
him at flarting. It is obferved by the writer juft cited, that
for courfing, hares on marfies or down are the flouett.
The open country about Swaffham in Norfolk, and the
Downs in Wiltshire, are both noted; but above all, the
Flixton Wolds, in Yorkshire. The Flixfon hares are fo
fliett, that the courfe is extendecl sometimes to the length
of five or six miles: they are generally found on the fide of
a hill to the north, which they invariably afcend; at the top
they have flat down for three or four miles, and then a steep
defcent, after which they ascend a hill almoit perpendicular;
at the top is a large whin-cover, into which they beat many
capital greyhounds; and perhaps it is the only place in
England where a hare was ever feen to beat for four miles
over turf a brace of the bell greyhounds that could be pro-
duced.

Hares are faid to forefee a change of weather, and to feet
themselves accordingly: they are feldom found in places
much expofed to the winds, efpedially when it is fouthwter
or northerly; and they who get money by finding hares, are
directed by the wind where to look for their game. Near
the hedges or inclofures they are more frequently found than
in the middle of the field. Shepherds and hare-finders re-
mark, that hares on the Downs have variety of feats, which,
as the weather directs, they change from time to time, and return to again; and that the more rain that falls, the nearer to the top of the hill is the hare feeds herself. When fitting, the covers the lower parts of her joints with her belly, her fore-legs are most commonly extended forward, and her chin reddens on the extremity of her nose. When a hare is seen fitting, the fox may be known: if a buck, the ears will be close together; those of the doe will be diffused on each side of the neck and shoulders. The approach must be circuitous, but directly towards a hare on her form, or else the wily tenant is shrewd from it. For other particulars relating to this animal, see GREYHOUND and HARE.

COURT, I. A gun that is placed in the fore-castle of a galleon for the purpose of firing over the peak. The weight of its ball is from 23 to 34 lb. The gun, however, may be of any size, and the bale, of course, of any weight.

COURRÈS, N., in Geography, was born at Nîmes in 1725; for some time he was a preacher at Lau- fanne in Switzerland; not contented, however, with his situation, he removed to Paris, where, at different periods, he published, in eight volumes, a work, entitled, "The primitive World analyzed and compared with the modern World," which exhibited much ingenuity and research, but which did not prove so profitable to the author as he had anticipated. He was accordingly remunerated, on account of his integrity and worth, by the French academy; and he was appointed a superintend of one of the museums at Paris. In the latter part of his life he became the advocate of animal magnetism, a subject, by which an infatuated public was for some time led away: to his zeal in this cause, he is said to have fallen a victim in the year 1784. After his decease, the ninth volume of his "Primi- tive World" was published. Court was author of the "Natural History of Language," or, "A Summary of Universal Grammar."

COURT, an appendage to a house or habitation; consisting of a piece of ground inclosed with walls, but open upwards.

The word is formed from the French court, and that from the Latin coloris; whence also court and curia are sometimes used for the same. In the laws of the Germans, there is one article, De eo qui in curte regis furtum committat; and another, De eo qui in curte duarum hominum occidat. Others derive court from the Gaulish curios, formed of colors, and colors from *curueto.* See Court.

The court before a house is properly called the fore-court; that behind, the back court; that where country affairs, &c. are managed, i.e. where cattle, &c. come, the baile-court. Court is also used for the palace, or place where a king or sovereign prince resides.

COURT, Curia, in a Law Sense, is the place where justice is judicially administered. (Co. Litt. 53.) It denotes also the assembly of judges, jury, &c. in that place. By the law of England, no court in this kingdom can claim any jurisdiction, unless it be some way or other derived from the crown; the king being the fountain of justice, and the supreme magis of the kingdom, intruded with the whole executive power of the land. To him alone, therefore, belongs the right of erecting courts of judicature; for though the constitution of the kingdom hath entrusted him with the whole executive power of the laws, it is impossible, as well as improper, that he should personally carry into execution this great and extensive trust. It is, consequently, necessary, that courts should be erected, to assist him in executing this power; and equally necessary, that, if erected, they should be erected by his authority. And hence it is, that all jurisdictions of courts are either mediately or immediately derived from the crown, their proceedings are generally in the king's name, they pass under his seal, and are executed by his officers, whether created by act of parliament, or letters patent, or by order of the king. (The only methods by which any court of judicature can exist,) the king's consent in the case of this two former is expressly, and in the latter impliedly, given. (Co. Litt. 266.) In all these courts, the king is supposed, in contemplation of law, to be always present; but as this is in fact impossible, he is represented by his judges, whose power is only an emanation of the royal prerogative. See Judges.

Yet the king cannot give any addition of jurisdiction to an ancient court; but all such courts must be held in such manner, and proceed by such rules, as their known usage has limited and precluded. Whence it follows, for instance, that the court of king's bench cannot be authorized to determine a mere real action between subject and subject; nor can the court of common pleas enquire of treason or felony. Accordingly, the king hath committed all his power judicial to one court or the other. (4 Ill. 71.) And by Inst. 24 Hen. III. c. 11, it is enacted, that all persons shall receive justice in the king's courts, and none take any instructions, &c. of his own authority, without award of the king's courts. Moreover, it is laid, that the customs, precedents, and common judicial proceedings of a court are a law to that court; and the determinations of courts make points to be law. (2 Rep. 12. ; 4 Rep. 53. Hob. 298.) All things determinable in courts, that are courts by the common law, shall be determined by the judges of the same courts; and the king's writ cannot alter the jurisdiction of a court. (6 Rep. 11.) The court of B. R. regulates all the inferior courts of law in the kingdom, so that they do not exceed their jurisdictions, nor alter their forms, &c. As the court of king's bench has a general superinten- dency over all inferior courts, it may award an attachment against any such court, usurping a jurisdiction not belonging to it; but it is sometimes usual if it be to award a writ of prohibition, and afterwards to attach, upon its ceasing to proceed. (2 Hawk. P. C. c. 22. § 35.) If a court, having no jurisdiction of a cause depending in it, does not proceed, proceed, the judgment in such court is crassum non judicii, and void; and a suit lies against the judges who give the judgment, and any officer that executes the process under them. (1 Litt. Ab. 370.) Of the variety of courts, appointed for the more speedy, universal, and impartial administration of justice, and poffessing either a more limited or a more extensive jurisdiction, (of which Compton describes in England,) some are superior, and others inferior. To all of them, however, one distinction belongs; viz. that some of them are courts of record, and others not of record. A court of record is that where the acts and judicial proceedings are enrolled in parchment for a perpetual memorial and testimony: which rolls are called the records of the court, and are of such high and super-reigning authority, that their truth is not to be called in question. See Record.

All courts of record are the king's courts, in right of his crown and royal dignity (Finch. L. 231.), and therefore,
no other court hath a right to fine or imprison; so that the very erection of a new jurisdiction, with power of fine or imprisonment, makes it instantly a court of record. (Salk. 290. 12 Mod. 328.) These courts have power to hold plea, according to the course of the common law, of real, personal, and mixed actions, where the debt or damage is above 40s.; as the king's bench, common pleas, &c. A court not of record is the court of a private man; whom the law will not intrust with any discretionary power over the fortune or liberty of his fellow subjects. Such are the courts-baron incident to every manor, and other inferior jurisdictions, where the proceedings are not enrolled or recorded; but as well their existence as the truth of the matters therein contained shall, if disputed, be tried and determined by a jury. A writ of false judgment, and not of error, lies on their judgments. These courts can hold no assignable matters cognizable by the common law, unless under the value of 40s., nor of any forcible injury whatsoever, not having any procès to arrest the person of the defendant.

(2 Inst. 312.)

Courts, both of civil and criminal jurisdiction, are distributed into two classes; viz. those which have public and general jurisdiction throughout the whole realm, and such as are only of a private and special jurisdiction, in some particular parts of it. To the class of civil courts of the former kind belong the following four sorts; 1. The universally established courts of common law and equity, as the court of pie-poudre, court-baron, hundred-court, county-court, court of common-pleas, court of king's bench, court of exchequer, high court of chancery, court of exchequer-chamber, the house of peers, or supreme court of judicature in the kingdom, and the courts of affife and nisi prims;—2. The ecclesiastical courts, or courts christian, such as the archdeacon's court, the consistory court of every diocesan bishop, the court of arches, the court of peculiar, the prerogative court, the court of delegates, and commission of review;—3. The courts military, as the court of chivalry;—4. The maritime courts. To the clas of courts having a special jurisdiction belong the forecourt, the court of commissioners of fowlers, the court of policies of assurance, the court of the marshall, and the palace court at Westminster, the courts of the principality of Wales, the court of the duchy chamber of Lancaster, the courts appertaining to the counties palatine of Chester, Lancaster, and Durham, and the royal franchise of Ely, the flannary courts in Devonshire and Cornwall, the several courts within the city of London, and other cities, boroughs, and corporations, throughout the kingdom, the courts of requits, or courts of conscience, and the chancellor's courts in the two universities of England.

Criminal courts of a public and a general jurisdiction are the high court of parliament, which is the supreme court in the kingdom, the court of the lord high steward of Great Britain, the court of king's bench, the court of chivalry, the high court of admiralty, which five courts may be held in any part of the kingdom, and their jurisdiction extends over crimes that arise throughout the whole of it, from one end to the other; of a general nature, and yet of a local jurisdiction, confined to particular districts; the courts of oyer and terminer, and general gaol-delivery, the court of general quarter-feelions of the peace, the sheriff's court, the court-leet, the court of the coroners, and the court of the clerk of the market; to which we may add the courts of greater dignity than many of those already enumerated, but of a more confined and partial jurisdiction, such as the court of the lord steward, treasurer, or comptroller of the king's household, the court of the lord steward of the king's household, &c., and courts of the univerities. We shall now proceed to describe each of these in alphabetical order.

Courts of Admiralty, is a court held by the high admiral, or commissioners of the admiralty; to which belongs the decision of all maritime controversies, trials of malefactors, and the like.

The proceedings in this court, in all civil matters, are according to the civil law; because the sea is without the limits of the common law, and under the admiral's jurisdiction. As this court proceeds according to the method of civil law, like the ecclesiastical courts, it is usually held at the same place with the superior ecclesiastical courts, at Doctors' Commons in London.

In criminal affairs, which ordinarily relate to piracy, robbery, and murder, the proceedings in this court were anciently likewise by information and accusation, according to the civil law; but that being found inconvenient, because no peron could be convicted without either their own confession, or two witnesses of the fact, so that the greatest offenders often escaped with impunity, it was enacted by statute 28 Henry VIII. c. 15, that offenders amenable to this court should be tried by commissioners of oyer and terminer, under the king's great seal; namely, the admiral, or his deputy, and three or four more; (among whom two common law judges are usually appointed;) the indictment being first found by a grand jury of twelve men, and afterwards tried by a petty jury; and that the course of proceedings should be according to the law of the land. This is now the only method of trying marine felonies in the court of admiralty; the judge of the admiralty still presiding therein, as the lord mayor is the president of the felion of oyer and terminer in London. This court hath cognizance of all crimes and offenses committed either upon the sea, or on the coasts, out of the body or extent of any English country; and, by stat. 15 Ric. II. c. 5, of death and mayhem happening in great ships being and hovering in the main stream of great rivers, below the bridges of the same rivers, which are then a fort of ports or havens; such as are the ports of London and Gloucester, though they lie at a great distance from the sea. 5 Eliz. c. 5. 1 Ann. c. 9. 4 Geo. I. c. 11.

The court of admiralty is said to have been first erected in 1357, by king Edward III. To the civil law, first introduced in it by the founder, were afterwards added, by his successors, particularly Richard I., the laws of Oleron, and the marine offices and constitutions of several people; as those of Genoa, Pisa, Marselles, Maffina, &c. The jurisdiction of this court was limited by Richard II. 13 Ric. II. c. 8. 15 Ric. II. c. 3.

Under this court is also a court-merchant, or court of equity; wherein all differences between merchants are decided according to the rules of the civil law.

Between the courts of admiralty and common law, there seems to be disputum imperium; for the sea, so far as the low-water mark, is accounted infra corpus comitatus adjacentis; and the causes thence arising are determinable by the common law; yet, when the sea is full, the admiral has jurisdiction there also so long as the sea flows, over matters done between the low-water mark and the shore.

The admiralty court is not allowed to be a court of record, because it proceeds by the civil law; and the judge has no power to take such a recognizance as a court of record may. The process and proceedings are in the name of the lord admiral, and by libel; and the plaintiff and defendant enter into a stipulation or bond for appearance, and to abide the sentence. 4 Inst. 134. 135.

If an erroneous judgment be given in the admiralty, appeal
 Appeals from the vice-admiralty courts in America, and
our other plantations and settlements, may be brought be
tween the courts of admiralty in England, as being a branch
of the admiralty's jurisdiction; though they may be also
brought before the king in council. But in case of prize-
masters, taken in time of war, in any part of the world, and
condemned in any courts of admiralty, or vice-admiralty,
as lawful prize, the appeal lies to certain commissioners
of appeals, consisting chiefly of the privy-council, and not to
directors of appeals. This is by virtue of divers treaties with
foreign nations; by which particular courts are established
in all the maritime countries of Europe, for the decision of
the question, whether lawful prize or not; for this being
a question between subjects of different states, it belongs
totally to the law of nations, and not to the municipal laws
of either country; to determine it: the original court to
which this question is referred in England is the court of
admiralty; and the court of appeal is in effect the king's
privy-council; the members of which are, in consequence of
treaties, commissioned under the great seal for this pur-
pose.

In Scotland the jurisdiction of the admiral in maritime
causes was formerly concurrent with that of the sheriff.
The high admiral is declared the king's justice general
upon the seas, or fresh water within flood-mark, and in all
harbours and creeks. His civil jurisdiction extends to all
maritime causes, and thus comprehends questions of charter-
parties, freights, salvages, bottomries, &c. He exercises
this supreme jurisdiction by a delegate, the judge of the
high court of admiralty; and he may also name inferior de-
puties, whose jurisdiction is limited to particular districts,
and whose sentences are subject to the review of the high
court. In causes which are declared to fall under the
admiral's cognizance, his jurisdiction is sole; inasmuch, that
the sheriff itself, though it may review his decrees of suspen-
sion or reduction, cannot carry a maritime question from him
by advocacy. The admiral has acquired, by usages, a ju-
risdiction in mercantile causes, even where they are not
chiefly maritime, cumulative with that of the judge-ordi-
nary.

Among the Hollandersthe five admiralties were, ac-
cording to their old constitution, so many chambers, com-
pounded of the deputies of the nobles, the provinces, and the
towns; to whom belong the equipping out of fleets, the
furnishing provisions for them, and directing what relates
to maritime affairs.

Court of Aids, in France. See Aids.

Court of Archdeacon, is the most inferior court in the
whole ecclesiastical polity. It is below the archdeacon's
absence before a judge, appointed by himself, and called
his official; and its jurisdiction is sometimes in concurrence
with, sometimes in exclusion of, the bishop's court of the
diocese. From hence, however, by statute 24 Hen. VIII.
c. 12, an appeal lies to that of the bishop.

Court of Archbishops, or Archbishops, the chief and most
ancient court in the whole of ecclesiastical polity. It is the
father of the archdeacon's absence before a judge, appointed by himself, and called
his official; and its jurisdiction is sometimes in concurrence
with, sometimes in exclusion of, the bishop's court of the
diocese. From hence, however, by statute 24 Hen. VIII.
c. 12, an appeal lies to that of the bishop.

Court of Aids, Curia de Arcubus, is the chief and most
ancient court in the whole of ecclesiastical polity. It is the
father of the archdeacon's absence before a judge, appointed by himself, and called
his official; and its jurisdiction is sometimes in concurrence
with, sometimes in exclusion of, the bishop's court of the
diocese. From hence, however, by statute 24 Hen. VIII.
c. 12, an appeal lies to that of the bishop.

The judge of this court is styled dean of the arches, or of-
official of the arches court. He hath extraordinary jurisdiction
in all ecclesiastical causes, except what belong to the prero-
gative court; also all manner of appeals from bishops, or
their chancellors or commissaries, deans and chapters, &c.
feit or lat are directed either. He hath ordinary jurisdiction
throughout the whole province of Canterbury in causes
of appeals; so that upon any appeal made, he, without any
further examination of the cause, sends out his citation to
the appellee, and his inhibition to the judge, from whom
the appeal was made. Of this see more, 4 Inst. 357. But
he cannot cite any person out of the diocese of another
unless it be on appeal, &c. 23 Hen. VIII. c. 9. In another
sentence, the dean of arches has a peculiar jurisdiction of
thirteen parishes in London, belonging to the archbishop, called
a deanship (being exempt from the authority of the bishop
of London), of which the parishes of Bow is the principal. The
parsons concerned in this court, are the judge, advocate,
registrar, proctors, &c. and the foundation of a suit in
these courts, is a citation for the defendant to appear; then
the libel is exhibited, which contains the action, to which
the defendant must answer: whereupon the suit is contested,
proves are produced, the cause determined by the judge,
upon hearing the advocates on the law and fact; when fol-
owing the question and decree thereupon. See Audience.

This court (as also the court of peculiar, the admiral-
ity court, the prerogative court, and the court of delegates,
for the most part) is now held in the hall belonging to
the college of civilians, commonly called Doctors Commons.

From this court, the appeal is to the king in Chancery,
that is, to a court of delegates appointed under the king's
great seal. by 25 Hen. VIII. c. 19, as supreme head of the
English church, in the place of the bishop of Rome, who
formerly exercised this jurisdiction.

Court of Affises. See Assises.

Court of Augmentation, the name of a court erected, 27
Hen. VIII. for determining suits and controversies, relating
to monasteries and abbey lands. The intent of this court
was that the king might be justly dealt with, touching the
profit of such religious houses, and their lands, as were
given him by act of parliament the same year. This court
was dissolved under queen Mary, by the parliament held
the first year of her reign; but the office of augmentation
remains to this day, in which are many valuable records.

Terms de Ley. 68.

Court of Bargemote. See Bargemote.

Courts Baron, are courts which all lords of manors, who
were anciently called barons, have within their respective
precincts. Such a court is an infallible incident to a ma-
nor; and must be held by prescription, for it cannot be
created at this day. 1 Inst. 58. 4 Inst. 268.

A court baron must be kept by the fiewarde on some part
of the manor and is twofold. 1. By custom, if a man
having a manor in a town, grant the inheritance of the co-
the whole to another; this grantee may keep a court for the customary tenants, and accept
furnishments to the use of others. and make both admittances and grants. (See Copyhold). 2. By common law. This is of free-
holders, which is properly called a court baron, wherein the freeholders are judges, and the fiewarde is rather the registrar
than the judge: whereas of the other, the lord or his fiewarde is judge.

These two courts, though essentially distinct, are fre-
quent confounded. The latter, or freeholders' court, was
compounded of the lord's tenants, who were the peers of each
other, and were bound by their secolal tenure to affit their
lord in the dispensation of domestic justice. This was for-
merly held every three weeks; and its most important bu-
ines is to determine, by writ of right, all controversies re-
lating to the right of lands within the manor. It may also
hold
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Hold plea of any personal actions, of debt, trespass on the
land, or the like, where the debt or damages do not amount to
5s. (Finch. 254.) But the proceedings on a writ of right may be removed into the county-court by a precept from the sheriff, called a "writ," nisi tollit atque extinti causam et curiam baronum. And the proceedings in all other actions may be removed into the superior courts by the king's writs of "potein," or "accedas ad curiam," according to the nature of the suit. (F. N. B. 4, 70. Finch. L. 444, 445.) After judgment given, a writ allof "false judgment" lies to the courts at Westminister to rehear and review the cause, and not a writ of "errors" for this is not a court of record; and therefore, in some of these writs of removal, the first direction given is to cause the plaintiff to be recorded, "recordari facias loquem." 

COURT, Bishop's, or Consistory Court, an ecclesiastical court held in the cathedral or in the deanery of any cathedral, for the trial of all ecclesiastical causes arising within their respective dioceses; the judge whereof is the bishop's chancellor, or his commissary, anciently called ecclipsiasticus, and ecclesiae confidens, q. d., the church-lawyer; who judges by the civil and canon law; and, if the deed be large, has his commissaries in remote parts, who hold what they call consistory courts, for matters limited to them by their commission. From the sentence of this judge, appeal lies, by virtue of the statute 24 Hen. VIII. c. 12, to the archbishop of each province respectively.

Court of Chancery, the grand court of equity, and conscience, instituted to moderate the rigour of the other courts that are tied to the strictest letter of the law; and in matters of civil property the most important of any of the king's superior and original courts of justice.

The judge of this court is the lord high chancellor, whose function is called under chancellor.

The proceedings of this court are either ordinary, like other courts, according to the laws, statutes, and customs of the nation, by granting out writs remedial and mandatory, writs of grace, &c. or extraordinary, according to equity and conscience, by bills, answers, and decrees, to examine frauds, combinations, trusts, secret uses, &c. to soften the severity of common law, and rescue people from oppression; to relieve them against cheats, unexpected accidents, breaches of trust, &c.

The ordinary legal court is much more ancient than the court of equity. Its jurisdiction is to hold plea upon a faire factum to repeal and cancel the king's letters patent, when made against law, or upon untrue fuggellions; and to hold pleas of petition, monstrans de droit, traversies of offices, and the like; when the king had been advised to do any act, or is put in possession of any lands or goods, in prejudice of a subjéct's right. (4 Rep. 54.) On proof of which, as the king can never be supposed intentionally to do any wrong, the law concludes not but he will immediately redress the injury; and refers that conscientious talk to the chancellor, the keeper of his conscience. It also appertains to this court, to hold plea of all personal actions, where any officer or minister of the court is a party. (4 Infl. 80.) It might likewise hold plea (by faire factum) of partitions of lands in coparcenary, (Co. Litt. 171. F. N. B. 61.) and of dower (Bro. Abr. tit. Dover, 66. Mor. 565.) where any ward of the crown was concerned in interest, so long as the military tenures subsisted; as it now may also do of the tithes of forest land, where granted by the king, and claimed by a stranger against the grantee of the crown; and of executions on statutes, or recognizances in nature whereby the statute 23 Hen. VIII. c. 6. (2 Roll. Abr. 499.) But if any cause come to illege in this court, that is, if any fact be disputed between the parties, the chancellor cannot try it, having no power to summon a jury; but must deliver the record pro praetorio into the court of king's bench, where it shall be tried by the court, and judgment shall be given thereon. (Cro. Jac. 12. Latch. 112.) And when judgment is given in chancery, upon demurrer, or the like, a writ of error, in nature of an appeal, lies out of this ordinary court into the court of king's bench. In this ordinary, or legal, court, is also kept the curia regis; out of which, all commissions of charitable uses, fewers, bankruptcy, idiocy, lunacy, and the like, do issue; and for which it is always open to the sujéct, who may there, at any time, demand and have, ex debito justitiae, any writ which his occasions may call for. Sometimes a supersummer, or writ of privilege, hath been granted here to discharge a perion out of prison. An habeas corpus, prohibition, &c. may be had from hence in the vacation; and here a subpoena may be had to force witnesses to appear in other courts, when they have no power to call them. (4 Infl. 76. 1 Danv. Abr. 776.)

The extraordinary court, or court of equity, is now become the court of the greatest judicial consequence. This distinction between law and equity, as administered in different courts, is not at present known, nor seems to have been ever known in any other country at any time; and yet the difference of one from the other, when administered by the same tribunal, was perfectly familiar to the Romans; the jus praetorium, or discretion of the praetor, being distinct from the leges, or standing laws, but the power of both centered in the same magistrate, who was equally entrusted to pronounce the rule of law, and to apply it to particular cases by the principles of equity. With us also, the aula regia, which was the supreme court of judicature, undoubtedly administered equal justice, according to the rules of both or either, as the case might chance to require; and when that was broken to pieces, the idea of a court of equity, as distinguished from a court of law, did not subsist in the original plan of partition. For though equity is mentioned by Bredon as a thing centred to strict law, yet neither in that writer, nor in Glanvill, or Fleta, nor yet in Britton, is a syllable to be found relating to the equitable jurisdiction of the court of chancery. It seems probable, therefore, that when the courts of law, proceeding merely upon the ground of the king's original writs, and confining themselves to these, gave a harsh or imperfect judgment, the application for redress used to be to the king in person, affilied by his privy council; and they referred the matter either to the chancellor and a select committee, or, by degrees, to the chancellor only, who mitigated the severity, or supplied the defects of the judgments pronounced in the courts of law, upon weighing the circumstances of the case. This was the custom not only among our Saxon ancestors, before the institution of the aula regia, but also after its dissolution, in the reign of king Edw. I., and perhaps during its continuance in that of Henry II. In these early times, the chief judicial employment of the chancellor must have been in devising new writs, directed to the courts of common law, to give remedy in cases where none was before administered. Accordingly, provision was made to this purpose by fiat. Wilm. 2. 13 Ed. 1. c. 24, which provision, duly applied, might have effectually answered all the purposes of a court of equity; except that of obtaining a discovery by the oath of the defendant. But about the end of the reign of king Edw. III., when uses of land were introduced, the separate jurisdiction of the chancery as a court of equity began to be established. But as the clergy, so early as the
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The reign of King Stephen, had attempted to bring their ecclesiastical courts into courts of equity, till they were checked by the conditions of Clarendon, the ecclesiastical chancellor, who then held the seals, were probably remiss in abridging their own newly-acquired jurisdiction. In the time of Lord Ellesmere (A.D. 1616), arose that notable dispute between the courts of law and equity, let on foot by Sir Edward Coke, then chief justice of the court of king's bench; whether a court of equity could give relief after or against a judgment at the common law. This contest was so warmly carried on, that indubitable were preferred against the justices, the solicitors, the counsel, and even a master in chancery, for having incurred a præmature, by questioning, in a court of equity, a judgment in the court of king's bench, obtained by gross fraud and imposition. (Bacon's Works, vol. iv. 611, &c.) This matter, being brought before the king, was by him referred to his learned counsel for their advice and opinion; who reported so strongly in favour of the courts of equity, that his majesty gave judgment on their behalf; but, not contented with the irrepressible reasons and precedents produced by his counsel, (for the chief justice was clearly in the wrong) he chose rather to decide the question, by referring it to the plenitude of his royal prerogative. (1 Chanc. Rep. Append. 26.) Sir Edward Coke submitted to the decision, and thereby made atonement for his error; but it was followed by his removal from office. (See Article Coke.) Lord Bacon, who succeeded Lord Ellesmere, reduced the practice of the court into a more regular system; but did not fit long enough to effect any considerable revolution in the science itself; and few of his decrees which have reached us are of any great consequence to posterity. His successors, in the reign of Charles I., made little improvement on his plan; and even after the restoration, the seal was committed to the earl of Clarendon, who had withdrawn from practice as a lawyer near 20 years; and afterwards to the earl of Shaftesbury, who (though by education a lawyer) had never practiced at all. Sir Henage Finch, who succeeded in 1673, and became afterwards earl of Nottingham, was a person of the greatest abilities and most uncorrupted integrity; a thorough master and defender of the laws and constitution of his country; and endowed with a pervading genius that enabled him to discourse and to pursue the true spirit of justice, notwithstanding the embarrasments raised by the narrow and technical notions which then prevailed in the courts of law, and the imperfect ideas of redress which had plagued the courts of equity. The reason and necessities of mankind, arising from the great change in property by the extension of trade, and the abolition of military tenures, co-operated in establishing his plan, and enabled him, in the course of nine years, to build a system of jurisprudence and jurisdiction upon wide and rational foundations; which have also been extended and improved by many great men, who have since preided in chancery. And from that time to this, the power and business of the court have increased to an amazing degree.

The ancient rule for the jurisdiction of the extraordinary court of chancery, was confined to frauds, accidents, and trusts; and though at this day, by its power of granting injunctions, it curbs the jurisdiction of other courts, and thereby has swallowed up the greatest part of the business of the common law; yet it is still under some of these notions, that it exercises a jurisdiction in relieving against forfeitures, penalties, where a compensation can be made, in preventing multiplicity of suits, decreing a specific execution of agreements, affording defective conveyances, &c. But in no case will it relieve against an act of parliament, nor directly against a fundamental rule or maxim of the common law, nor retain a suit where the party appears to have a plain and adequate remedy at law. Three things, say Lord Coke, are to be adjudged in a court of equity. 1. All causes, frauds, and decrees, for which there is no remedy by the ordinary course of law. 2. Accidents, as when a servient, obligor, or mortgagor, is to pay money on a certain day, and they happen to be robbed in going to pay it. 3. Breaches of trust and confidence. 4 I. 108. All matters of truth are particularly within the jurisdiction of the court of chancery.

From this court of equity in chancery, as from the other superior courts, an appeal lies to the house of peers. But there are these differences between appeals from equity, and writs of error from a court of law: 1. That the former may be brought upon any interlocutory matter, the latter upon nothing but only a definitive judgment: 2. That on writs of error, the house of lords pronounces the judgment; on appeals, it gives direction to the court below to rectify its own decree. See Appeal.

The officers of this court, beside the lord chancellor, who is supreme judge, are, the master of the rolls, who, in the chancellor's absence, hears causes, and gives decrees; and twelve masters of chancery, one of whom is the master of the rolls, who are affiliates, and sit by turns on the bench.

For the equity part of this court, there are fix clerks, and their deputies, who have under them a number of others, called the sixty fearful clerks, in the nature of attorneys of the court; two chief examiners, for examining witnesses, who have each five or fix clerks apiece; one principal regifter, who has four or five deputies; clerk of the crown, who makes writs, commiilions, &c.; and many of the Fleet; serjeant at arms, who bears the mace before the chancellor; and the usher and crier of the court.

To the common law part belong the twenty-four curators, and their clerks, who make out original writs; clerks of the petty bag; clerks of the hanaper; commissary of the hanaper; clerk of appeals; clerk of the faculties; sealers; chausiers; clerks of the patents, of prejentations, dismissions, licenses to alienate, imprisonments, protections, subpenas, affidavits, &c. See each under its own article. For a further account of the proceedings in the court of chancery, or a court of equity, see Equity; and for the mode of conducting a suit in chancery, see Suit.

Court of Chivalry, called also Marshall's Court, is one of the military courts, formerly held before the lord high constable and earl marshal of England jointly; but since the attainer of Stafford duke of Buckingham, in the 13th of Henry VIII., and the consequent extinguishment of the office of lord high constable, it hath usually, with respect to civil matters, been held before the earl marshal only. This court, by statute 15 Ric. II. c. 2, hath cognizance of contracts and other matters touching deeds of arms and war, as well out of the realm as within it. And from its sentences an appeal lies immediately to the king in person. (4 Stat. 125.) This court was in great reputation in the times of pure chivalry, and afterwards during our connections with the continent by the territories which our princes held in France; but it is now grown almost entirely out of use, on account of the feebleness of its jurisdiction, and want of power to enforce its judgments: as it can neither fine nor imprison, not being a court of record. (7 Mod. 127.)

This court, which is a military court, or court of honour, when held before the earl marshal only, is also a criminal court, when held before the lord high constable of England jointly with the earl marshal. Then it has jurisdiction over
pleas of life and member, arising in matters of arms and deeds of war, as well out of the realm as within it. But the criminal, as well as civil, part of its authority, is fallen into entire disuse, since the extinguishment of the office of High Constable of England. See also CHIVALRY.

The Curia, Curia Christiisalis, is an ecclesiastical jurisdiction, opposed to the civil court, or lay tribunal: and as in secular courts, human laws are maintained; so in the court Christian, the laws of Christ should be the rule. The judges therefore are divines; viz. archbishops, bishops, archdeacons, &c. 2 Indt. 488. Courts Christian are so called, because they handle matters especially appertaining to Christiannity. See Courts Ecclesiastical, mira. See also CONSISTORY.


A circuit, a court in Scotland, which can judge in all criminal causes which do not suffer death or demourishment, upon appeal from any inferior court within their district; and has a supreme civil jurisdiction, by way of appeal, in all causes not exceeding 12. sterlings, in which their decrees are not subject to review; but no appeal is to lie to the circuit, till the cause be finally determined in the inferior court.

The common pleas, Communia placitor, or Bancus communis, one of the king's courts, held in Westminster-hall. Gwyn observes, that till the granting of Magna Charta, there were but two courts called the king's courts, viz. the exchequer, and the king's bench; and that upon the grant of that charter, the court of common pleas was erected, and fixed to a place certain, viz. Westminster-hall: whence the writs which before ran coram rei judicatis metis, simply, were now changed, and run coram jucticiaribusc apud Westminster. See Aula Regia.

Sir Edward Coke, however, is of opinion (Pref. to 8th Report, and 1 Indt. 71 b.) that the court of common pleas existed as a distinct court before the coronet; and was not created by Magna Charta, at that time there were "fudiciarii de Banco, &c." although before this act, common pleas might have been held "in Banco regii,"; and all original writs were returnable there. According to Madox, the origin of the court of common pleas is of a much later date than that assigned by lord Coke. He so far agrees with lord Coke as to admit, that the Magna Charta of Henry III. rather confirmed than created the "Bank," or "Common Pleas," and that such a court was in being long before the Magna Charta of the 17th of king John; though it was then full made stationary. But in other respects they widely differ: for Mr. Madox thinks, that some time after the coronet there was one great and supreme judicature, called the "Curia Regis," which he supposes to have been of Norman, and not Anglo-Saxon, original, and to have exercised jurisdiction over common as well as other pleas; that the common pleas and exchequer were gradually separated from the "Curia Regis," and became jurisdictions wholly distinct from it; and that the separation of the common pleas began in the reign of Richard I., or early in the reign of king John, and was completed by Henry III. (See Mad. Hist. Exch. 63. 539. fol. ed. Blacklt. Com. iii. 27. 4 Indt. 99. 1 Indt. 71 b.)

The jurisdiction of this court, which is general, and extends throughout England, is founded on original writs, infuing out of the chancery, which are the king's mandates for them to proceed on to determine such and such causes. But this is to be understood when the cause is between common persons; for when an attorney, or any person belonging to the court, is plaintiff, he sues by writ of privilege, and is sued by bill, which is in nature of a petition; both which originally commence in the common pleas, and have no foundation in the chancery. 4 Indt. 99.

In all personal actions brought by and against common persons, the only way of proceeding in this court is by original. There is, indeed, one other way of proceeding in this court, in common cases, which is sometimes used; and which is called proceeding by "original quære calumniæ frequent." See CAPIAS.

All actions belonging to this court come hither, either by original, as arrests and outlawries; or by privilege or attachment, for or against privileged persons; or out of inferior courts, not of record, by pons, recordare, accidit ad curiam, currit of false judgment, &c. Actions popular, and actions penal, of debt, &c. upon any flatrate, are cognizable by this court; and, besides having jurisdiction for punishment of its officers and ministers, this court, without any writ, may, upon a suspicion only, grant prohibitions, to keep as well temporal as ecclesiastical courts within their bounds and jurisdiction. (4 Indt. 99. and Vaughan's Reports, p. 157.)

As pleas or suits are regularly divided into two forts; viz. pleas of the crown, which comprehend all crimes and misdemeanors, wherein the king (on behalf of the public) is the plaintiff; and common pleas, which include all civil actions, depending between subject and subject, the former of these were the proper object of the court of king's bench; the latter of the court of common pleas, which is a court of record, and is styled by sir Edward Coke the lock and key of the common law: for herein only can real actions, that is actions which concern the right of freethold in the realty, be originally brought: and all other, or personal pleas between man and man, are likewise here determined; though in most of them the king's bench has also a concurrent authority.

The jurisdiction of each court is at this day so well established, that as the court of king's bench cannot determine a mere real action, so neither can the court of common pleas inquire of felony or treason. (2 Hawk. P. C. p. 2.)

In term time, this court may award a habeas corpus by the common law, for any person committed for any cause under treason or felony; and thereupon discharge him, if it shall clearly appear, by the return, that the commitment was against law, as being made by one who had no jurisdiction of the cause, or for a matter, for which, by law, no man ought to be punished. Vide Vaughan, 154. 47. 2 Jones, 14. 2.

All civil causes, real, personal, and mixed, are tried in this court, according to the strict law of the realm. Furtresce represents it as the only court for real causes. In personal and mixed actions it hath a concurrent jurisdiction with the king's bench. This court doth not police any original jurisdiction; nor has it, like the court of king's bench, any mode of proceeding in common cases peculiar to itself.

The chief justice hereof is called lord chief justice of the common pleas, who is accompanied with three of his associates, called puifné justices, created by letters patent, and as it were judges installed or placed on the common bench by the lord chancellor, and the lord chief justice of the court; to whom the seal of the court is committed. These judges sit every day in the four terms to hear and determine all matters of law arising in civil causes, whether real, personal, or mixed and compound of both. Thee the court takes cognizance of, as well originally, as upon removal from the inferior courts. But a writ of error, in the nature of
In an appeal, lies from this court into the court of king’s bench.

The other officers belonging to this court are, the custos brevium; the prothonotaries, or praetors, and their seconduaries, a chorographer; nine flazers; four exengers; clerk of the warrants; clerk of the juries, or jurata writs; clerk of the treasury; marshal and associated to the chief justice; clerk of the king’s silver; clerk of the esions; clerk of the outlaries; clerk of the errors, &c. whose several functions see in their places. Custos brevium, Chirographer, Exingers, Clerk, &c. To these officers may be added a proclamar, a keeper of the court, cryer, and tiptaff; besides the warden of the Fleet, there are also attorneys of this court, whose number is unlimited, and none may plead at the bar of the court in term-time, or sign any special pleadings, but serjeants at law.

Court of Commissary of Review, is formed by a commissary sometimes granted, in extraordinary cases, to revive the sentence of the court of delegates; when it is apprehended they have been led into any material error. This commissary the king may grant, although the statutes 24 and 25 Henry VII. declare the sentence of the delegates definitive; because the pope, as supreme head of the canon law, used to grant such commissary of review; and such authority as the pope heretofore exerted is now annexed to the crown, by statutes 26 Hen. VIII. c. 1. and 1 Eliz. c. 1. But this is not matter of right which the subject may demand “ex debito justitiae,” but only a matter of favour, and which is therefore often denied. 4 Init. 341.

Court of High Commissary, an ecclesiastical court erected and united to the regal power (4 Init. 324.), by virtue of the statute 1 Eliz. c. 1. instead of a larger jurisdiction which had before been exercized under the authority of the pope. It was intended to vindicate the dignity and peace of the church, by reforming, ordering, and correctting the ecclesiastical state and persons, and all manner of errors, heresies, schisms, abuses, offences, contempt, and crometies. Under these general words, means were devis’d in that and the succeeding reigns, to vest in the high commissioners extraordinary and almost despotic powers of fining and imprisoning, which they exerted much beyond the degree of the offence itself, and frequently over offences by no means of spiritual cognizance. For these reasons the court was justly abolished by statute 16 Car. I. c. 11: and the weak and illegal attempt to revive it, during the reign of king James II. served only to haften that infatuated prince’s ruin. See Hundred Court.

Court of Conscience, Curia conscienc. In the 9th of Henry VIII. the court of conscience, or court of require, in London, was erected: there was then made an act of common council, that the lord mayor and aldermen should appoint monthly two aldermen and four different commissaries, to be commissaries to try in this court: twice a week, to hear and determine all matters brought before them between party and party, between citizens and freemen of London, in all cases where the debt or damage was under forty shillings. And this act of common council is confirmed by the stat. 1 Jac. I., which empowers the commissioners of this court to make such orders between the parties touching such debts, as they shall find fair and equitable and good conscience. Also the stat. 3 Jac. I. c. 15. since explained and amended by 14 Geo. II. c. 10. further establishes this court; the course and practice whereof is by famous, to which, if the party appear, the commissioners proceed summarily; examining the witneſses of both parties, or the parties themselves, on oath; and as they see cause, give judgment. If the party summoned appear not, the commissioners have power to apprehend and commit him; also the commissioners have power to commit any perfon refusing to obey their orders, &c. Vid. stat. 3 Jac. I.

By stat. 14 Geo. II. c. 10. the proceedings of the court of conscience are regulated; and in case any perfon抗拒 or infult any of the commissioners, on certifying it to the lord-mayor, he shall punish the offender by fine, not exceeding 20s., or may imprison him ten days. The time and expense of obtaining summary redress in this court are very inconsiderable, which renders it a great benefit to trade; and hence many trading towns and other districts have obtained acts of parliament for establishing in them courts of conscience upon nearly the same plan as that of London.

Court, Conistory. See Bishop’s Court and Consistory.

Court of the Coroner, is a court of record, to enquire when any one dies in prison, or comes to a sudden and violent death, by what manner he came to his end. See Coroner.

Court, County, is a court of justice, but not a court of record, held in each county by the sheriff thereof, or his deputy, every month. See Sheriff.

This county court had anciently the cognizance of matters of great moment; but it was much abridged by Magna Charta, and more by 1 Edward IV. But it has still the determination of debts and trespasses under forty shillings. In effect, until the courts at Welfinifter were erected, the county courts were the chief courts of the kingdom.

Among the laws of king Edgar is this, &c. Let there be two county courts in a year, and let there be prefect a bishop and an alderman or earl; one whereof shall judge according to the common law, the other according to the ecclesiastical law.—The conjunction of these two powers to affil each other, is as ancient as the English government itself. They were first separated by William the Conqueror, who brought all the ecclesiastical business into a consistory, erected for that purpose; and the law business into the king’s bench.

The dignity of this court was much impaired, when the bishop was prohibited, and the earl neglected to attend it. And in modern times, as proceedings are removable from hence into the king’s superior courts, by writ of sone or recordari, in the same manner as from hundred courts and courts baron; and as the same writ of false judgment may be had, in nature of a writ of error, this has occasioned the same difuse of bringing actions into it.

The county-court may hold plea of many real actions, and of all personal actions to any amount, by virtue of a special writ called a “judiciaries,” which is a writ empowering the sheriff for the fake of dispatch to do the same justice in his county-court as might otherwise be had at Welfinifter. The freeholders of the county are the real judges in this court, and the sheriff is the ministerial officer. The great conflux of freeholders attending at the county-court is the reason why all acts of parliament at the end of every session were wont to be there published by the sheriff; why all outlawries of absconding offenders are there proclaimed; and why all popular elections made by the freeholders, as formerly of sheriffs and conservators of the peace, and still of coroners, veredacons, and knights of the shire, must ever be made in pleno comitatu, or in full county-court. By the statute 2 Edw. VI. c. 25, no county-court shall be adjourned longer than for one month, confining of 28 days, which appears to have been the ancient usage. See Hundred Court.

Courts of the Counties Palatine of Chester, Lancaster,
and Durham, and of the Royal Franchise of Ely, are a
species of private courts, with a limited and local jurisdic-
tion, and having at the same time an exclusive cognizance of
pleas, in matters both of law and equity. In the latter,
as well as in the principality of Wales, the king's ordinary
writs, infuing under the great seal out of chancery, are of
no force; and since the privileges of these counties and
franchises have been abridged, writs and processes infuing in
the king's name, must be witnessed in the name of the owner
of the franchise. The judges of affize, who sit here, fit by
virtue of a special commission from the owners of the several
franchises, and under their seal, and not by the usual com-
misision under the great seal of England. See County
Palatine.

Court of Delegates, is a court where delegates or com-
misssaries are appointed by the king's commission, under
the great seal, and infuing out of chancery, upon an appeal to
him.

It is granted in three cases: first, when a sentence is
given in an ecclesiastical cause, by the archbishop, or his
official; secondly, when a sentence is given in an ecclesiasti-
ical cause, in places exempt; thirdly, when sentence is given
in the admiralty court, in suits civil or marine, by order of

This is the highest court for civil affairs concerning the
church; for the jurisdiction whereof it was provided, 25
Hen. VIII. that it shall be lawful for the subject, in
case of defect of justice in the ecclesiastical courts, to appeal
to the sovereign in his court of chancery; whereas a com-
mision is directed under the great seal to particular persons
therein mentioned, for redress of judgment. This commis-
ion is frequently filled with lords spiritual and temporal,
and always with judges of the courts at Westminster, and
doctors of the civil law. When the practice of appealing
to them was set at naile, and the jurisdiction usurped by the pope
was restored to the crown, to which it originally belonged,
(see Appeal,) the statute 25 Henry VIII. was enacted as a
declaration of the ancient law of the realm. (4 Inst. 341.)

But in case the king himself be party in any suits, in which ap-
pearance is made, the appeal does not lie to him in chancery,
which would be absurd; but by stat. 24 Hen. VIII. c. 12.
to all the bishops of the realm, assembled in the upper house
of convocation.

From the highest ecclesiastical court there lies no appeal
but to the court of delegates; and beyond this to no other,
except to the house of lords. But the king, of his free
will, may grant a commision of review, under the great seal.
The citations run all in the king's name. See Commis-
sion, and Court of Commission of Review.

Court of the Duchy of Lancaster, a court of
special jurisdiction, held before the chancellor of the duchy,
or his deputy, concerning all matters of equity relating to
lands held of the king in right of the duchy of Lancaster,
which is a thing very distant from the county palatine
(which hath also its separate chancery for sealing of writs,
and the like,) and compriseth such territory which lies at a
vast distance from it; as particularly a very large district
surrounded by the city of Westminster. The proceedings
in this court are the same as in the equity side in the courts
of exchequer and chancery (4 Inst. 206,) so that it seems
not to be a court of record; and indeed it has been held
that their courts have a concurrent jurisdiction with the
duchy court, and may take cognizance of the same causes.
(1 Chan. Rep. 55. Titol. 145. Hard. 171.) The original
of this court was in Henry the Fourth's time, when obta-
taining the crown by deposition of Richard II., and having
the duchy of Lancaster by defect, in right of his mother, be-
came feited thereof as king, not as duke. So that all the
liberties, franchises, and jurisdictions of the said county
pulled from the king, by his great seal, and not by livery,
for the benefit of his crown, as the cardon of March, and other poof-
fores, which descended to him by other ancles than the
king's, did.

Henry IV. by authority of parliament, fevered the pro-
feessions, liberties, &c. of the said duchy from the crown
but Edward IV. restored them to their former nature. See
County Palatine.

The officers belonging to this court, which is held in
Wentminster-hall, are, a chancellor, attorney-general, re-
ceiver-general, clerk of the court, and messenger; besides
the affillants, as an attorney in the exchequer, another in
chancery, and four commissaries. See Chancellor and
Attorney of the Duchy.

Courts Ecclesiastical, Curia ecclesiastica, are those courts
which are held by the king's authority, as supreme head of
the church, for matters which chiefly regard religion.
4 Inst. 321. See Church and Clergy.

In the time of our Saxon ancles, there was no dilinition
between the lay and ecclesiastical jurisdiction; the county-court was as much a spiritual as a temporal tri-
unal: the rights of the church were ascertained and effed-
ated at the same time, and by the same judges, as the
rights of the laity. For this purpose, the bishop of the di-
cocese, and the alderman, or in his absence the srit of the
county, used to fit together in the county-court, and had
there the cognizance of all causes as well ecclesiastical as
civil:—a superior deference being paid to the bishop's opin-
ion in spiritual matters, and to that of the lay judges in
temporal. (Ll. Edwar., c. 5.) But the church of Rome
indulged views of ambition that were inconsistent with this
rational and moderate plan; and in the papal system of po-
licity, the ecclesiastical jurisdiction was to be sole and super-
numerous, hedged in by the pope, by divine indefeasible
right and inculcated from Christ himself, and derived from
the pope to all inferior tribunals. It was not, however,
till after the Norman conquest, that this doctrine was re-
ceived in England, when William I., under the influence of the
monial-rites and foreign clergy, was induced to separate
the ecclesiastical court from the civil. The consequence of
this separation was, that the Saxon laws were soon overborne by
the Norman juries, when the county-court fell into dif-
regard by the bishop's withdrawing his presence, in ob-
comence to the charter of the conqueror, which prohibits
any spiritual cause from being tried in the secular courts,
and commanded the suitors to appear before the bishop
only, whose decisions were directed to be conformable to
the canon law. King Henry I., among other restorations
of the laws of king Edward the Confessor, revived the union
of the civil and ecclesiastical courts; thus, according to

The papal clergy, however, agitated by the arrogant arch-
bishop Anselm, disapproved the measure, and in their synod
at Wentminster, 3 Hen. I. ordained that no bishop should
attend the discussion of temporal causes; and thus the
now-existed union was fully dissolved. Upon the death
of Henry I., the usurper Stephen, brought in and supported
by the clergy, proposed an oath, that ecclesiastical perons
and ecclesiastical causes should subject only to the bi-
shop's jurisdiction. About this time the contest and emu-
lation between the laws of England and those of Rome
commenced; the temporal courts adhering to the former,
and the spiritual adapting the latter, as their rule of pro-
ceeding; and thus the breach between them was widened,
and a coalition afterwards became impracticable, which
might
COURT.

The laws and constitutions by which the church of England is governed, are divers immortal customs; our own provincial constitutions and the canons made in convocations, particularly those of 1653. statutes or acts of parliament concerning religion or causes of ecclesiastical cognizance, especially the rubrics in our common prayer book, founded upon the statutes of uniformity; and the articles of religion drawn up in 1522, "articuli clerici," 6 Eliz. 2. and established by 53 Eliz. c. 12.; and as it is said, the canons law, where all others fail.

The suits in spiritual or ecclesiastical courts, are for the reformation of manners, for punishing of heresy, defamation, laying violent hands on a clerk, and the like; and some of their suits are to recover tythes, legacies, contracts of marriage, &c. and in causes of this nature, the courts may give costs, but not damages. Things that properly belong to these jurisdicetions, are matrimonial and testamentary; and defamatory words for which no action lies at law, as for calling a person adulterer, fornicator, usurer, or the like. 11 Rep. 54. Dyer 240. The proceedings in the ecclesiastical courts are according to the civil and canon law; by citation, bibliography, anwser upon oath, proof by witnesses, and preambles, &c. and after sentence for contempt, by excommunication; and if the sentence is disliked, by appeal. The jurisdiction of these courts is voluntary or contentious; and the punishments inflicted by them, are censures and punishments pro fide anima, by way of penance, &c. They are not courts of record. See AUDIENCE.

These courts having contributed to the exercise of grievous oppression on persons charged with trivial offences within their spiritual jurisdiction, the statute 27 Geo. III. c. 44. limits the time of commencing suits for defamatory words to six months; and for incontinence and beating in the church-yard to eight months.

Court of Exchequer, in Military Matters, a meeting or affembly of officers, who are empowered and authorized to enquire into the conduct of the commander of an expedition, a corps, or a party: or to examine and investigate whether there be sufficient ground for a court martial on such part or parts of a person or persons conduct as is or are submitted to their consideration. Courts of enquiry cannot themselves award punishment, but must report the result of their investigations to the officer, by whose orders they were assembled. Courts of enquiry are also appointed to examine into the quality and distribution of military or warlike stores belonging to the crown, and the checks thereof, as will be hereinafter described. The court met in the chequers. 28.

Court of Exchequer, an ancient court of record, in which all causes touching the revenue and rights of the crown are heard and determined; and where the revenues of the crown are received. It is called the exchequer, feaccharium, as some say, from the chequer-wrought carpet, resembling a chefs-board, which covered the table in that court; and on which, when certain accounts of the king are made up, the same are marked and scored with counters. Others say, that it derived its name from the pavement of the court, which was chequered; and others refer the origin of its appellation to the chequers, or chefs-boards, used in their computations by the accountants in their office. This court, though inferior in rank not only to the court of king's bench, but also to the common pleas, is nevertheless very ancient; and the institution of it is ascribed to William the Conqueror, who formed the plan of it from the exchequer in Normandy, with many important alterations. Some persons have suggested that there was an exchequer under the Anglo-Saxon kings; but the most approved writers ascribe the introduction of it to William I., who esta-

The primary and original business of this court is to call the king's debtors to account by bill filed by the attorney-general, and to recover any lands, tenements, or heredities, any goods, chattels, or other profits or benefits, belonging to the crown, so that by their original constitution the jurisdiction of the courts of common-pleas, king's bench, and exchequer, was entirely separate and distinct: the common pleas
pleas being intended to decide all controversies between subject and subject; the king's bench to correct all crimes and misdemeanours that amount to a breach of the peace, the king being the plaintiff, as such offences are in open derogation of his crown; and the exchequer to adjudge and recover his revenue, wherein the king also is plaintiff, as the withholding and non-payment thereof is an injury to his jura satisfaction. But, as by a fiction almost all sorts of civil actions are now allowed to be brought in the king's bench, in like manner by another fiction all kinds of personal suits may be prosecuted in the court of exchequer. For as all the ministers and officers of this court have, like those of other superior courts, the privilege of suing and being sued, only in their own court; so also the king's debtors and farmers, and all accomplices of the exchequer, are privileged to sue and impale all manner of persons in the same court of equity, into which they themselves are called. They have likewise privilege to sue and impale another, or any stranger, in the same kind of common law actions (where the personalty only is concerned) as are prosecuted in the court of common pleas. This gives original to the common law part of their jurisdiction, which was established merely for the benefit of the king's accomplices, and is exercised by the barons only of the exchequer, and not the treasurer or chancellor. The writ upon which all proceedings here are grounded is called a quo warranto; in which the plaintiff sues against his own farmer or debtor, and that the defendant hath done him the injury or damage complained of; quo warranto sufficientis exhibitis, in which he is the lessee able to pay the king his debt or rent. And these suits are expressly directed, by what is called the statute of Rutland, (16 Edw. I. c. 11.) to be confined to such matters only, as specially concern the king or his ministers of the exchequer. And by the artifici super curias (28 Edw. c. 4.) it is enacted, that no common pleas be thereforholden in the exchequer, contrary to the form of the great charter. But now by the fuggition of privilege, any person may be admitted to sue in the exchequer as well as the king's accountant. The form of being debtor to the king is, therefore, become matter of form and mere words of course, and the court is open to all the nation equally. The same holds with regard to the equity side of the court; for there any person may file a bill against another upon a bare fuggition that he is the king's accomplicant; but whether he is so, or not, is never controverted. In this court, on the equity side, the clergy have long been accustomed to exhibit their bills for the non-payment of tithes, in which case the form of being the king's debtor is no fiction, they being bound to pay him their first fruits and annual tuitions. But the chancery has of late years obtained a large share in this business. In the court of equity the proceedings are by English bill and answer, agreeably to the practice of the high court of chancery. In this court the attorney-general brings bills for any matters concerning the king; and any person, grieved in any cause prosecuted against him on behalf of the king, may bring his bill against the attorney-general to be relieved in equity, in which case the plaintiff must attend the king's attorney with a copy of the bill, and procure him to answer the same; and the attorney-general may call any that are interested in the cause, or any officer or others, to inform him in framing his answer, so that the king be not prejudiced by it; and his answer is to be put in without oath. (4 Inst. 170, 172, 118.)

An appeal from the equity side of this court lies immediately to the house of peers; but from the common law side, in pursuance of the statute 31 Edw. III. c. 12, a writ of error must first be brought into the court of exchequer-chamber. And from the determination there had, there lies, in the denier report, a writ of error to the house of lords. The chancellor, or under-treasurer, hath the custody of the seal of this court. See Chancellor of the Exchequer. For the officer of the attorney-general, see that article. See also Remembrancers, Chamberlain, Clerk and Comptroller of the Pipe, Clerk of the Exchequer, Foreign Officers, Auditor, Teller, Clerk of the Pells, Clerk of the Nilbus, Clerk of the Receipt, etc.

By 23 Geo. III. c. 82, the officers of the two chambers, the tally cutter, usher of the exchequer, and the second clerks to each teller, shall, after the death, surrender, forfeit, or removal of the persons interested in them, be abolished. Upon the death, &c. of the two chambers, instead of the tally now used to denote the receipt of money, there shall be substituted an indented cheque receipt. And upon the death, &c. of the usher, the chief officer in each office shall supply his place. After the death, &c. of the present auditor, clerk of the pells, either of the four tellers, or two chambers, the payment of all salaries, fees, and emoluments to the said officers, shall cease, and in lieu thereof, certain annual salaries are made payable, viz. to the auditor 400L., his chief clerk 400L., clerk of the pells 300L., his first clerk 200L.; the four tellers each 100L., and each of their first clerks 100L. These are to appoint such other clerks and officers as they think fit, to be approved by the treasury. All fees as heretofore (see that 26 Geo. III. c. 99.) to be received by the first clerk to the clerk of the pells (400L. of whose salary is on that account;) two-thirds thereof to be applied to the sinking fund, and one-third to pay the above salaries. The houses of the auditor, four tellers, and usher, shall, after the death, &c. of the present polles, be vested in his majesty, and not annexed to the offices. And no office in the receipt of the exchequer may be granted either in possession or reversion, in any other manner, than subject to this act.

The court of exchequer in Scotland has the same power, authority, privilege, and jurisdiction over the revenue of Scotland, as the court of exchequer in England has over the revenues there; and all things and matters competent to the court of exchequer in England, so far as they relate to the king's revenues, are likewise competent to the exchequer of Scotland, with those limitations, viz. that no debt due to the crown shall affect the debtor's real estate in any other manner than such estate may be affected by the laws of Scotland; and that the validity of the crown's titles to any honours or lands shall continue to be tried by the court of faction. The judges are likewise invested with the power of calling signatures, gifts, and tutors, and to revive and compound them in the same manner as was done by the lord high treasurer, commissioners of the treasury, and court of exchequer in Scotland, before the union. But though all these must pass in exchequer, it is the court of faction only that can judge of their preference, after they are completed. This court consists of the lord high treasurer of Great Britain, and a chief baron, with some other barons of the exchequer; and all sergeants at law, barristers at law, of five years standing, in any of the four inns of court of England, and advocates of five years standing, in the college of justice in Scotland, are qualified for being barons of this court; whose commissions are "quam diu se bene gefcit."

Court of Exchequer Chamber, a court of appeal for correcting the errors of other jurisdictions; first erected by statute 3 Edw. III. c. 12, to determine causes upon writs of
To that end it confided of the lord chancellor and lord treasurer, taking unto them the justices of the king's bench and common pleas. In imitation of this, a second court of exchequer chamber was erected by statute 27 Eliz. c. 8. consisting of the justices of the common pleas and the barons of the exchequer, before whom writs of error may be brought, to reverse judgments in certain suits originally begun in the court of king's bench. In this court there are no more than two return-days in every term; one called the general "affirmance-day," appointed by the judges to be held a few days after the commencement of every term, for the general affirmation or reversal of judgments; the other the "adjournment-day," usually held a day or two before the end of every term. On the first of these days, judgments are affirmed or reversed, or writs of error non-procedi; the intent of the latter is to finish such matters as were left undone at the former; on which last day (as well as on the first) judgments may be affirmed or reversed, or writs of error non-procedi, on paying a fee extraordinary to the clerk of the errors, and setting down the cause for affirmation two days before the adjournment-day. (Impey, K. B. 678.)

Into the court of exchequer chamber (which then consists of all the judges of the three superior courts, and now and then the lord chancellor also), are sometimes adjourned from the other courts such causes as the judges, upon argument, find to be of great weight and difficulty, before any judgment is given upon them in the court below. (4 Inst. 119. 2 Bull. 145.)

Court of Faculties in England, belongs to the archbishop of Canterbury, and his chief officer is called "magister ad facultates." His power, by the stat. 25 Hen. V. c. 21., is to grant dispensations, as to marry persons without the banns being first asked, and every diocesan may make the like grants, to ordain a deacon under age, for a fun to succeed the father in his benefice, one perf. to have two or more benefices incompatible, &c. And in this court are registered the certificates of bishops and noblemen granted to their chaplains, to qualify them for pluralities and non-residencies. (4 Inst. 337.)

The office where such dispensations are taken out, is also called the Faculties office.

Courts of Forei, are courts of private and special jurisdiction, instituted for the government of the king's forest in different parts of the kingdom; and for the punishment of all injuries done to the king's deer or venison, to the vert or greenfield, and to the covert, in which such deer are judged. These are the courts of Attachments, of Regard, of Swinmont, and of Jusfice-fact; which see respectively.

Court, Hundred, is a larger Court-baron held for all the inhabitants of a particular hundred, instead of a manor. The fee fiefs are here the judges, and the steward the registrar, as in the case of a court-baron. This is likewise no court of record; resembling the former in all points, except that in point of territory it is of a greater jurisdiction. (Finch. L. 248. 4 Inst. 567.) Sir Edward Coke says, (2 Inst. 71.) that this was derived out of the county-court, for the case of the people, that they might have justice done them at their own doors, without any charge or loss of time; but its institution was probably coeval with that of hundreds themselves, which seem to have been introduced, though not invented, by Alfred, being derived from the polity of the ancient Germans. (See Hundred) Cæfar (De Bell. Gall. l. vi. c. 2.) speaks positively of the judicial power exercised in their hundred courts and courts-baron. And Tacitus (De Morb. Germ. c. 13.) informs us not only of the authority of the lords, but of that of the central, the hundredors or jury, who were taken out of the common freeholders, and had themselves a share in the determination. This hundred-court was denominated "hiz-rides" in the Gothic institution. But this court, as all causes are equally liable to removal from hence, as from the common court-baron, and by the same writs, and may also be reviewed by writ of false judgment, is therefore fallen into equal disuse with regard to the trial of actions.

Judge Blackstone observes, that many inconveniences have arisen from the disuse of the ancient county and hundred-courts; in which causes of small value were always formerly decided, with very little trouble and expense to the parties. This mode he thinks much preferable to that of multiplying courts of conscience, in derogation of the common law, and by vesting in standing commissioners large discretionary powers, which tend to create a petty tyranny; and which, by a disuse of the trial by jury, may tend to estrange the minds of the people from that valuable prerogative of Englishmen. He therefore wishes, that the proceedings in the county and hundred-courts could again be revived, and duly regulated. The experiment, he says, has been actually tried, and has succeeded in the populous county of Middlesex, and this might serve as an example to others. For by statute 23 Geo. II. c. 34., it is enacted, 1. That a special county-court shall be held at least once a month in every hundred of the county of Middlesex, by the county-clerk. 2. That twelve freeholders of that hundred, qualified to serve on juries, and sworn by the sheriff, shall be summoned to appear at such court by rotation; to none shall be summoned oftener than once a year. 3. That in all causes, not exceeding the value of 40s., the county-clerk and twelve jurors shall proceed in a summary way, examining the parties and witnesses on oath, without the formal process so often used; and shall make such order therein as they shall judge agreeable to conscience. 4. That no plaints shall be removed out of this court, by any process whatsoever; but the determination herein shall be final. 5. That if any action be brought in any of the superior courts against a person resident in Middlesex, for a debt or contract, upon the trial of which the jury shall find less than 40s., damages, the plaintiff shall recover no costs, but shall pay the defendant double costs; unless upon some special circumstances, to be certified by the judge who tried it. 6. A table of very moderate fees is prescribed and set down in the act, which are not to be exceeded upon any account whatsoever. This, says the learned judge, is a plan entirely agreeable to the constitution and genius of the nation; calculated to prevent a multitude of vexatious actions in the superior courts; and at the same time to give honest creditors an opportunity of recovering small sums; which they are now frequently distrained from by the expense of a suit at law—a plan which, one would think, wants only to be generally known, in order to its universal reception.

Court of Hylings, a court of record, held before the lord mayor and aldermen of London, the sheriff, and recorder, in Guildhall. 4 Inst. 247.

Of the great antiquity of this court we find mention in the laws of king Edward the Confessor. "Debet etiam in Londin. quae eft caput regis & legum, tempus curiae dominii regis Angliae. Curia; fundata crat olim & admonita ad initiad & ad modum & in memoriam veteris magis Trigge, & utique in hodiernum diem leges, & juris & dignitatem & libertatem regii confuta, maires una temer inutilis habent consuetudinem." Taylor, Hist. of C. 26.

The court of hullings is the principal and highest of all the courts of the city. This court determines all pleas, real, personal,
personal, and mixt: and here all lands, tenements, and hereditaments, rents, and services within the city of London, and suburbs of the same, are pleadable in two bookings: the one called bookings of plea of lands, and the other called bookings of common pleas. Error or attain lie there of a judgment or false verdict in the street's courts.

In the bookings of plea of lands are brought writs of right patent, directed to the sheriffs of London, on which writs the tenant shall have three summonses at the three bookings next following: and after the three summonses, there shall be three eons at three other bookings next ensuing; and at the next bookings after the third eon, if the tenant makes default, process shall be had against him by grand cause, or petit cause, &c. If the tenant appears, the demandant is to declare in the nature of what writ he will without making protention to sue in nature of any writ: then the tenant shall have the view, &c.; and if the parties plead to judgment, the judgment shall be given by the recorder; but no damages, by the custom of the city, are recoverable in any such writ of right patent. In the bookings of common pleas are pleadable writs ex gratia quarebus, writs of gaolse, of slower, scuffle, &c.; also, writs of regent are taken out in the bookings; and at the fifth bookings the outlawries are awarded, and judgment pronounced by the Recorder.

If an erroneous judgment is given in the bookings, the party grieved may sue a commination out of chancery, directed to certain persons to examine the record, and thereupon do right. (1 Roll Abr. 745.) From the judgment of justices appointed by the king's commissio, a writ of error lies immediately to the house of lords. In the court of bookings the burghers to serve for the city in parliament must be elected by the livory of the respective companies.

Court, Jufliciary. See Jusficiary.
Court of Jufiice. See Court of Session.
Court of King's Bench, Banatus Regius, is the supreme court of common law in the kingdom; to called, because the king used formerly to sit there in person, the style of the court being coram ipso rege. (4 Inst. 73.) During the reign of a queen, it is called "queen's bench," and during the usurpation of Cromwell, it was denominated "upper bench." This court consists of a chief justice, and three jufhie justices, (formerly four or five) who are by their office the chief regians or rulers of the peace, and supreme coroners of the land. Although the king himself used to sit in this court, and is still supposed to do so; yet he did not, neither by law is he empowered to determine any cause or motion, but by the mouth of his judges, to whom he hath committed his whole judicial authority. In the adia regia, indeed, the king used to decide causes in person. After its dissolution, king Edward I. frequently sat in the court of king's bench, and in later times, James I. is said to have sat there in person, but he was informed by his judges that he could not deliver an opinion. This court, which is the remnant of the adia regia, must, from its nature, follow the king's peron wherever he goes; and, therefore, all process issuing out of this court in the king's name is returnable to ubiqueque fuerimus in Anglia." For some centuries past it hath uniformly sat at Westminster, being an ancient palace of the crown; but it might remove anywhere else, and its moveable quality, as well as its dignity and power, is fully expressed by Bracnot (L. 3. c. 10.) and is specially provided for by the "artecnit super cartas," (28 Edw. I. c. 5.)

This court hath always retained a supreme original jurisdiction in all criminal matters, the process issuing from, and being returnable into it; but in trespasses it might be made returnable into either the king's bench or common pleas, because the plea was criminal as well as civil.

The jurisdicdon of this court is very high and transcendent. It keeps all inferior jurisdictions within the bounds of their authority, and may either remove their proceedings to be determined here, or prohibit their progress below. It superintends all civil corporations in the kingdom. It commands magistrates and others to do what their duty requires, in every case where there is no other specific remedy. It protects the liberty of the subject, by speedy and summary interposition. It takes cognizance of both criminal and civil causes; the former in what is called the crown-office, or crown-office; the latter in the plea-office of the court.

On the crown-office, or crown-office, it takes cognizance of all criminal causes, from high treason, down to the most trivial misdemeanor or breach of the peace. Into this court also indictments from all inferior courts may be removed by way of corerorari, and tried either at bar, or at nisi prius, by a jury of the county out of which the indictment is brought.

The judges of this court are the supreme coroners of the kingdom; and the court itself is the principal court of criminal jurisdiction known to the laws of England. On this account, by the coming of the court of king's bench into any county, all former commissions of oyer and terminer, and general gaol-delivery, are at once abrogated and determined ipso facto. (4 Inst. 173. 2 Hawk. P. C. c. 3.) With regard, however, to the feission of gaol-delivery for Middlefex, the statute 25 Geo. III. c. 18, enacts, that, when any feission of oyer and terminer, and gaol delivery of the gaol of Newgate, for the county of Middlefex, shall have begun to be holden before the effegion day of any term, the same feissions shall continue to be holden, and the business finally concluded, notwithstanding the happening of such efficient day of any term, or the sitting of his majesty's court of king's bench at Westminster, or elsewhere, in the county of Middlefex; and that all trials, &c. had at such seission so continued to be holden, shall be good and effectual, to all intents and purposes. Into this court of king's bench reverted all that was good and falutary of the Court of Star-Chamber; which see.

This court is often termed the elupus morum of all the realm; and wherever it meets with an offence contrary to the first principles of justice, and of dangerous consequences, if not restrained, it may adapt a proper punishment to it. For the better restraining such offences, it has a deterroury power of inflicting exemplary punishment on offenders, either by fine, imprisonment, or other infamous punishment, as the nature of the crime, considered in all its circumstances, shall require. It may make use of any pition which shall seem most proper; and it is said, that no other court can remove or null perons condemned to imprisonment by this court. (2 Hawk. P. C. c. 3. § 5.)

An act of parliament, appointing, that all crimes of a certain denomination, shall be tried before certain judges, does not exclude the jurisdiction of this court, without express negative words; and therefore it has been resolved, that the statute 33 Hen. VIII. c. 12, which enacts, that all treasons, &c. within the king's house, shall be determined before the lord lieuteward of the king's house, does not deprive the court of king's bench of proceeding against such offences. (2 Inst. 549.) But where a statute creates a new offence, which was not taken notice of by the common law, and creates a new jurisdiction for the punishment of it, and prescribes a certain method of proceeding, it seems questionable how far this court has an implied jurisdicdon.
COURT.

The judges of this court are the sovereign judges of oyer and terminer, gaol-delivery, conservators of the peace, &c. and also the sovereign coroners; and therefore, where the sheriffs and coroners may receive appeals by bill, a fortiori, the judges may. Also this court may admit perfun to bail in all cases according to their discretion. (4 Intit. 72: 9 Co. 118 b. 4 Intit. 72. 4 Hawk. 157.)

In the county where the king's bench sits, there is every term a grant inquest for presenting all criminal matters arising within that county, and then the court proceeds upon informations &c.; or, if, in vacation, there be any indictment of felony before the justices of peace of oyer and terminer, or gaol delivery, there sitting, it may be removed by certiorari into B. R. and there proceed de die in diem. (2 Hale's Hift. P. C. 3.) It may award execution against perfun brought in parliament, or any other court; when the record of their attainer, or a transcript is removed, and their perfun brought thither by habeas corpus. (Cro. Cas. 176. Cro. Jac. 495.)

Pardons of perfun condemned by former justices of gaol-delivery ought to be allowed in B. R.; the record and prisoner being removed thither by certiorari and habeas corpus. (2 Hawk. P. C. c. 6. § 19.)

On the pleasa side, or civil branch, of this court, it hath an original jurisdiction and cognizance of all actions of trespas, or other injury alleged to be committed vi et armis; of actions for forgeries of deeds, maintenance, conspiracy, deceit, and actions on the kene which allege any falsity or fraud; all of which favour of a criminal nature, tho' the action is brought for a civil remedy; and make the defendant liable in strictsense to pay a fine to the king, as well as damages to the injured party. (Finch. L. 198. 2 Intit. 23.) The same doctrine is also now extended to all actions of the cafe whatsoever. (F. N. B. 86, 92. 1 Lilly, praef. reg. 503.)

But no action of debt or detinue, or other mere civil action, can by the common law be prosecuted by any subjct in this court, by original writ out of chancery. (4 Intit. 76.)

Though an action of debt, given by fiatute, may be brought in the king's bench as well as in the common pleas. (Carr. 234.) And yet this court might always have held plea of any civil action (other than actions real) provided the defendant was in the county of the court, or in the custody of the marshal, or prisone-keeper, of this court; for a breach of the peace, or any other offence. (4 Intit. 71.) And in process of time, it began by a fiction to hold plea of all personal actions whatsoever, and has continued to do so for ages (Ibid. 72.)

It being furnished that the defendant is arrested for a supposed trespas, and has never in reality committed; and, being then in the custody of the marshal of this court, the plaintiff is at liberty to proceed against him for any other personal injury; which furnish, of being in the marshal's custody, the defendant is not at liberty to dispute.

These fictious of law, though at first they may startle the incautious, he will find, upon farther consideration, to be highly beneficial and useful; especially as this maxim is ever invariably observed, that no fict 03 shall extend to work an injury; its proper operation being to prevent a mischief, or remedy an inconvenience, that might result from the general rule of law. (2 Rep. 39. 2 Roll Rep. 502.)

So true it is, that in fictiones juris femper subfalti aquilas. (11 Rep. 51. Co. Litt. 150.) In the present case, it gives the judgment to the decision of more than one tribunal, before which he may institute his action; and prevents the circuitry and delay of justice, by allowing that suit to be originally, and in the first instance, commenced in this court, which, after a determination in another, might ultimately be brought before it on a writ of error.

Although common pleasa cannot be immediately holden in Banco Regis, because such pleas must be held in a certain place, without following the king's court, whence the court of king's bench cannot determine a mere real action; yet, when there is a defect in the court, in which, by law, they are held originally, they may be holden in B. R.; as if a record come out of the common pleas by writ of error; so where the plea in a writ of right is removed out of the county by a plea in B. R. on a writ of myfis repellant, &c. (2 Intit. 23. 4 Intit. 72. 113 Saund. 250. Shaw. P. C. 57.) Thus, any action, vi et armis, where the king is to have fine, as ejectment, trespas, forcible entry, &c. being of a mixed nature, may be commenced in B. R. (2 Intit. 23.)

All officer or misconduct of the court entitled to the privilege thereof may be tried by bill in debt, covert, or other personal action; for the act takes not away the privilege of the court. (2 Intit. 23. 4 Intit. 71. 2 Bol. 123.)

This court is likewise a court of appeal, into which may be removed, by writ of error, all determinations of the court of common pleas, and of all inferior courts of record in England; and to which a writ of error lies allo from the court of king's bench in Ireland. Yet even in this high and honourable court is not the dernier resort of the subject; for, if he be not satisfied with any determination here, he may remove it by writ of error into the house of lords, or the court of exchequer-chamber, as the case may happen, according to the nature of the suit, and the manner in which it has been prosecuted. This court has not only the power to reverse erroneous judgments, for such errors as appear the defect of the understanding; but also to punish all inferior magistrates, and all officers of justice, for wilful and corrupt abuses of their authority against the obvious principles of natural justice. (2 Hawk. P. C. c. 3. § 13. Vaugh. 157. 1 Saak. 201.)

This court grants writs of habeas corpus to relieve perfun wrongly imprisoned, and may bail any perfun whatsoever. (2 Intit. 72. 73.) Writs of mandamus are granted by this court, to an officer in his corporation, or in his appanage, or any other office, by the court of chancery. (1 Intit. 32. 31 Sa. 97.)

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justice, train-bearer, clerk of the Nif prius in London and Middlesex, clerks of the Nif prius to the different counties appointed by the Custom Brevium, crier at Nif prius in London and Middlesex, receiver-general of the fiscal-office, clerks, usherers, and tipstaffs. See Secondary, Customs Brevium, Clerk of the Papers, of the Declaration, of the Errors, of the Bills, of the Rules, Etc. Signer and Sealer, Filazer, Marshal, Crier, Etc.

In this court there are two modes of proceeding; viz. by original writ, or by bill. The former is generally used when the debt is large, because the defendant, if he means to delay execution of the judgment, must bring his writ of error returnable in parliament, which greatly enhances the expense, but the latter is more expedient.

Court-leet or View of Frank pledge, is a court of record, held to be the most ancient in the land for criminal matters, and to have been coeval with the establishment of the Saxons here. See Frank Pledge and View. This court is held once in the year or oftener, (commonly twice, i.e. within a month after EASTER and a month after Michaelmas) within a particular hundred, lordship, or manor, before the warden or the court-leet, being the king's court granted by charter to the lord, or lords of those hundreds or manors; and it has the same jurisdiction within those particular precincts, as the sheriff's court hath in the county. Its original intent was to view the frank-pledges, that is, the freedmen within the liberty: who, according to the institution of the great Alfred, were all mutually pledges for the good behaviour of each other. Besides this, the preservation of the peace, and the chastisement of divers minute offences against the public good, are the objects both of the court-leet and the sheriff's court,—which have exactly the same jurisdiction, one being only a larger species of the other; extending over more territory, but not over more causes. All freeholders within the precincts are obliged to attend them, and all persons comenior therein, which comonriesty consists in usally lying there,—a regulation, which owes its original to the laws of King Canute. But persons under 12 and above 60 years old, peers, clergymen, women, and the king's tenants in ancient demeane, are excused from attendance there: all others being bound to appear upon the jury, if required, and to make their due pretentions. It was also anciently the custom to summon all the king's subjects, as they respectively grew to years of discretion and strength, to come to the court-leet, and there take the oath of allegiance to the king. (2 Inl. 120, 121.) Here also, by immortal usage, and of common right, that ancient constitution officer the constables (4 Inl. 265.) and ancient constitution officer the jury, (4 Inl. 266.) and sometimes by prescription, the mayor of a borough (see Inl. 2 Gen. I. c. 4.) are elected and sworn. The other general business of the leet and town was to present to the jury all crimes whatsoever that happened within their jurisdiction; and not only to present, but to punish, all trivial misdemeanors, as all trivial debts were recoverable in the court-leet, and county-court;—justice, in these minute matters of both kinds, being brought home to the doors of every man by our ancient constitution. The suitors, elected, sworn, and charged to inquire into crimes and misdemeanors, proper for pretention, were not to be fewer than 12, nor more than 25; in some manors, they continued in office for a whole year; and in others they were sworn and discharged in the course of a day. If the offence be treason or felony, they must return the pretention (called in these cases an indictment) to the king's justices of oyer and terminer, and gaol-delivery. (See Inl. Sir. II. c. 17, 1 Edw. III. fl. 2. c. 17.) The objects of the jurisdiction of the court-leet and town were unavoidably more numerous; being such as in some degree, either life or more, affect the public weal, or good government of the district in which they are; from common nuisances and other material offences against the king's peace and public trade down to cases-dropping, warts, and irregularities in public commerce. Upon every pretention of the jury retained by the court, an amercement follows of course, which is afterwards affixed, in open court agreeably to magna charta (c. 12.) by the jures per quas, that is, the peers or equals of the delinquent; and affixed or reduced to a pecuniary sum, by two or more suitors sworn to be impartial. (8 Rep. 39. fl. W. I. c. 6. 2 Inl. 27.) The amercements thus ascertained are then declared, or executed, from the roll or book in which the proceedings are recorded and levied by the bailiff, by dimes and fife of the party's goods (8 Rep. 41.), by virtue of a warrant from the steward to that effect, or may be recovered by other means, as by procès of levart fictas (Hardr. 471.) or action of debt. (Bull. N. P. 167.) But both the courts, leet and town, have been for a long time in a declining way;—a circumstance, owing, in part, to the discharge granted by the statute of Marlbridge, 52 Hen. III. c. 10. to all prelates, peers, and clergymen from their attendance upon these courts, which occasioned their sinking into disrepute. Hence it is that their business hath for the most part gradually devolved upon the quarter-sessions; which it is particularly directed to do in some cases by statute i Edw. IV. c. 2.

Court of the Regent, was a court obtained by cardinal Wolsey pope Leo X. in the ninth year of Henry VIII. wherein he, as legate of the pope, had power to prove wills, and dispose of offences against the spiritual laws;

and it was but of short continuance.

Court of Marshalsea, a court of record, often conformed with the palace court at Westminster, though distinct, was originally holden before the ward of the king's house, and was instituted to administer justice between the king's domestick servants, that they might not be drawn to other courts, and thus deprive the king of their service. (1 Bulltr. 211.) It was formerly held in, though not a part of, the Aula regia (Flct. I. 2. c. 2.;) and when this was subdivided, remained a distinct jurisdiction;—holding plea of all trespasses committed within the verge of the court, where only one of the parties is in the king's domestick service (in which case the inquest shall be taken by a jury of the country) and of all debts, contracts, and covenants, wherein both of the contracting parties belong to the same household; and then the inquest shall be completed of men of the household only. (Art. Juper Cart. 28 Edw. I. c. 5. fl. 5 Edw. III. c. 2. 10 Edw. III. fl. 2. c. 2.) By the statute of 13 Ric. II. fl. 1. c. 3. (in affinment of the common law, 2 Inl. 543.) the verge of the court in this respect extends for 12 miles round the king's place of residence. And as this tribunal was never subject to the jurisdiction of the chief judiciary, no writ of error lay from it (though a court of record) to the king's-bench, but only to parliament (1 Bulltr. 211. 10 Rep. 79.) till the statutes of 5 Edw. III. c. 2. and 10 Edw. III. fl. 2. c. 3. which allowed such writ of error before the king in his place. But this court being abandoned, and obliged to follow the king in all his progresses, so that by the removal of the household, actions were frequently discontinued (P. N. B. 241. 2 Inl. 543.) and doubts having arisen as to the extent of its jurisdiction (1 Bulltr. 208.) King Charles I. in the fifth year of his reign, by his letters patent, created a new court of record, called the Curia palatii, or palatine court, to be held before the ward of the household and knyght-marshalt, and the ward of the court, or his deputy; with jurisdiction.
tion to hold plea of all manner of personal actions whatsoever, which shall arise between any parties within 12 miles of his majesty's palace at Whitehall. (1 Sid. 180. Salk. 339.) This court is now held once a week, together with the ancient court of marshalla, in the Borough of Southwark. The proceedings here are either by capias or attachment; which is to be sworn on the defendant by one of the knights-marshall's men, who takes bond with sureties for his appearance at the next court; upon which appearance he must give bail to answer the determination of the court; and the next court after the bail is taken, the plaintiff is to declare, and set forth the cause of his action, and afterwards proceed to give in and try by a jury, according to the custom of the common law courts. But if the cause is of any considerable moment, it is usually removed on its first commencement, together with the custody of the defendant, either into the king's bench or common pleas by a babes corpus cum causa; or otherwise causes are here brought to trial in four or five court-days. The inferior business of this court hath of late years been much reduced, by the new courts of confidence in or near London; in consideration of which the four counsel belonging to this court had formerly granted for their lives by the statute 2 Hen. IV. c. 27. A writ of error lies from the marshalla court to the king's bench. The fees of this court are limited by the statute 2 Hen. IV. c. 13. This marshalla is that of the household; not the king's marshalla, which belongs to the king's bench. See Court of the Lord Steward, &c.

Court martial, a court instituted for the trying and punishing of offences in officers, soldiers, sailors, and all persons, in short, that are subject to martial law: its powers and authorities are both conveyed and regulated by the acts of parliament passed for the enforcement and preservation of discipline in the army and navy. By the mutiny act, 1 W. & M. p. 1699, and, with the interruption of about three years, from April 1699 to February 1701, annually renewed, for the regulation of the army, it is enacted, "that his majesty may, from time to time, grant a commission under his royal sign-manual, to any officer not under the degree of a field-officer, for holding a general court-martial within this realm; and also grant his warrant to the lord lieutenant of Ireland, or other chief governor or governors there for the time being, or the governor or governors of Minorca, Gibraltar, and any of his majesty's dominions beyond the seas respectably, or the peron or perons, their commander in chief, from time to time, to appoint courts-martial in the kingdom of Ireland, and other places and dominions respectively; in which courts-martial all offences mentioned in the articles of war, and all other offences herein-after specified, shall be tried and proceeded against in such manner as the act for that purpose directs." By the same act, the king is empowered to make new or additional articles of war, creating new offences, and to annex such punishments to them as he may think fit, not extending to life or limb. This is a power of great magnitude and extent; but as it has only an annual existence, there is but little danger of its being abused for the oppression of military subjects. Courts-martial have powers given to them to inflict, by their sentences, corporal punishment not extending to life or limb, on any soldier, for immorality, misbehaviour, or neglect of duty. A general court-martial must not consist of a smaller number of officers than thirteen, whereof none are to be under the degree of a commissioned officer. And the president of such a court-martial must neither be the commander in chief, nor the governor of the garrison, where the offender shall be tried, nor under the degree of a field-officer, except when a field-officer cannot be had; in which case, the officer next in seniority, not being under the degree of a captain, shall preside at such court-martial. And such court-martial is empowered and authorized to administer an oath to every witness on the examination or trial of any offences that shall be brought before them.

In all trials of offenders by general courts-martial, to be held in virtue and under authority of this act, every officer on such trials, before any proceeding be had thereupon, is required and obliged to take the following oaths upon the holy Evangelists, in the presence of the court and judge advocate, or his deputy, who is authorized to administer the same, in these words:

"You shall well and truly try and determine, according to the evidence in the matter now before you, between our sovereign lord the king's majesty and the prisoner to be tried. So help you God."

The oath is the following:

"I, A. B. do swear, that I will duly administer justice, according to the rules and articles for the better government of his majesty's forces, and according to an act of parliament now in force for the punishment of mutiny and desertion, and other crimes therein mentioned, without partiality, favour, or affront; and if any doubt shall arise, which is not explained by the said acts or act of parliament, according to my conscience, the belt of my understanding, and the custom of war in the like cases. And I further swear, that I will not divulge the sentence of the court, until it shall be approved by his majesty, the general, or commander in chief; neither will I, upon any account at any time whatsoever, disclose or discover the vote or opinion of any particular member of the court-martial, unless required to give evidence thereof as a witness by a court of justice, in a due course of law. So help me God."

Immediately after this oath has been administered to the respective members of the court-martial, the president is authorized and required to administer to the judge advocate, or to the person officiating as such, an oath in the following words:

"I, A. B., do swear, that I will not, upon any account at any time whatsoever, disclose or discover the vote or opinion of any particular member of the court-martial, unless required to give evidence thereof as a witness by a court of justice, in a due course of law. So help me God."

And here it is observable, that neither the judge advocate, nor the person officiating as such, is restrained as the members are from disclosing the sentence of the court, until it shall be approved by his majesty, the general, or commander in chief. This appears to be a great and material omission on the part of the legislature, and has often operated injuriously to individuals.

No sentence of death can be given against any offender, by any general court-martial, unless nine officers present shall concur therein; and if there be more officers present than thirteen, then the judgment shall pass by the concurrence of two thirds of the number of them. And no proceeding or trial can be had upon any offence, but between the hours of eight o'clock in the morning and three in the afternoon, except in cafes that require an immediate example. It is however provided, that the party tried by any general court-martial in the kingdom of Great Britain or Ireland, or in Jersey, Guernsey, Alderney, or Sark, or the islands thereto belonging, shall be entitled to a copy of the sentence and proceedings of such court-martial, upon demand thereof made either by himself, or by any other person or persons on his behalf, he or they paying reasonably for the same, at any time not sooner than three months after such sentence. And it is also provided, that in case of trials by
any general court-martial at Gibraltar or Minorca, the party shall be entitled to a copy of the sentence and proceedings thereof, at any time not longer than six months after the giving of the sentence; and that in case of trials by any general court-martial in his majesty's other dominions beyond the seas, he shall be entitled to a copy of the same, at any time not longer than twelve months after the sentence shall be given by the court, whether the sentence be approved or not.

It is also provided and enacted, that every judge advocate, or person officiating as such, at any general court-martial, shall transmit, as expeditiously as opportunity and the distance of place will permit, the original proceedings and sentence of such court martial to the judge advocate general in London; which original proceedings and sentence shall be carefully kept and preferred in the office of such judge advocate general, to the end that the persons entitled thereto may be enabled, upon application to the said office, to obtain copies thereof, according to the true intent and meaning of the act.

And it is likewise provided, declared, and enacted, that no officer or soldier, being acquitted or convicted of any offence, shall be liable to be tried a second time, by the same or any other court-martial, for the same offence, unless in case of an appeal from a regimental to a general court-martial; and that no sentence given by any court-martial, and signed by the president thereof, shall be liable to be revise more than once. It is also declared and enacted, that no officer or soldier shall be tried for any offence committed by him more than three years prior to the issuing of the warrant, unless he hath purposely abetted himself to avoid such trial.

The judgments of courts-martial, besides being subject to the disapprobation of the king, or his commanders-in-chief, are, like those of other courts, liable to be taken cognizance of, and the members punished for illegal proceedings; for the court of king's bench, being the supreme court of common law, hath not only power to reverse erroneous judgments given by inferior courts, but also to punish all inferior magistrates, and all officers of justice, for all wilful and corrupt abuses of authority against the known, obvious, and common principles of justice. (2 Hawk. P. C. c. 3, § 10,—c. 27. § 22.) The mutiny-act directs, that every action against any member or minister of a court-martial, in respect to any sentence, shall be brought in some of the courts of record at Westminster. And many instances of such prosecutions have occurred in Westminster-hall. An officer, however, in a court-martial, is not liable to be punished for mere mistakes, which an honest well-meaning man may fall into. And if the plaintiff, or prosecutor, becomes unsuitied, or the defendant has a verdict, he shall recover treble costs. There is also another tribunal before which the proceedings of courts-martial are liable to confine at least, namely, the house of commons.

Court Martial, regimental, cannot pronounce a sentence for inflicting any punishment which extends to the loss of life or limb. The colonel or commanding officer of the regiment approves the sentence of a regimental court-martial. Court Martial, garrison, or a garrison court-martial, resembles a regimental one in this respect, that the members composing it are not sworn, and that it is composed of officers of different regiments, instead of officers of one and the same corps. The sentence is approved of by the governor, or other commanding officer of the garrison.

Courts, Mayor's. To the lord mayor and city of London, belong several courts of judicature. The highest and most ancient is that called the Bungings, defined to secure the laws, rights, franchises, and customs of the city. The second is a court of requell, or of confissory; of which, before. The third is the court of the lord mayor and aldermen, where also the sheriffs sit: to which may be added two courts of orriffis; and the court of the city orphans, wherein the lord mayor and aldermen have the custody. Also, the court of common council, which is a court or assembly, wherein are made all by-laws which bind the citizens of London. It consists, like the parliament, of two houses: an upper, consisting of the lord mayor and aldermen; and a lower, of a number of common council men, chose by the several wards, as representatives of the body of the citizens. In the court of common council, are made laws for the advancement of trade; and committees yearly appointed, &c. But acts made by them are not to have the effect of lord mayor and aldermen, by stat. 21 Geo. I. c. 11. Also, the chamberlain's court, wherein everything relating to the rents and revenues of the city, as also the affairs of servants, &c. are transacted. Lastly, to the lord mayor belong the courts of coroner, and of escheator; another court for the confirmation of the river of Thames; another of goal delivery, held usually eight times a year at the Old Bailey, for the trial of criminals, wherein the lord mayor is himself the chief judge. There are other courts called quarter-sessions, or meetings of the wards; and courts of oyer and terminer, or assemblies of the several guilds and fraternities.

Courts of oyer and terminer, and general goal delivery, are courts held before the king's commissioners, among whom are usually two judges of the courts at Westminster, twice in every year, in every county of the kingdom, except the four northern ones, where they are held only once; and London and Middlesex, where they are held eight times. See Assises, Oyer and Terminer, and Goal-delivery.

Court, Palace. See Merchants' Court.

Court of Parliament. See Parliament.

Court of Peculiars, is a spiritual court, which is a branch of, and annexed to, the court of arches; held in such parishes as are exempt from the jurisdiction of the bishops, and are peculiarly belonging to the archbishop of Canterbury. All ecclesiastical causes, arising within these peculiar or exempt jurisdictions, are originally cognizable by this court. 4 Inst. 333. Stat. 22 & 23 Car. II. There are royal peculiars, and archbishop's peculiars; the king's chapel is a royal peculiar, exempted from all spiritual jurisdiction, and referred to the immediate government of the king himself; and there are some peculiar well-founded jurisdictions belonging to the king, which formerly appertained to monasteries and religious houses.

There are some peculiars which belong to deans and chapters, or a prebendary exempted from the archdeacon only: they are derived from the bishop, of ancient composition, and may be visited by the bishop in his primary or triennial visitation: in the mean time, an official of the dean and chapter, or prebendary, is the judge; and from hence the appeal lies to the bishop of the diocese. Wood, 504. Appeal lieth from other peculiar courts to the king in chancery. Stat. 25 Hen. VIII. c. 19.

The dean and chapter of St. Paul's have a peculiar jurisdiction; and the dean and chapter of Salisbury have a large peculiar within that diocese; so have the dean and chapter of Lichfield, &c.; 2 Nelf. Abr. 1345, 1441. Where a word cis intercalate, leading goods in several peculiars, it has been held that the archbishop is to grant administration. Sid. 92. 5 Mod. 239. Appeal lies to the king in chancery.

Court of the House of Peers, is the supreme court of jurisdiction
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jurisdiction in the kingdom; but has at present no original jurisdiction over causes, except only upon appeals and writs of error, to rectify any injustice or mistakes of the law, committed by the courts below; to which authority it succeeded of course upon the dissolution of the Aula regia. For as the barons of parliament were constituent members of that court, and the rest of its jurisdiction was dealt out to other tribunals, over which the great officers who accompanied these barons were respectively delegated to preside: it followed that the right of receiving appeals, and superintending all other jurisdictions, fell remained in the residue of that noble assembly, from which every other great court was derived. They are therefore in all causes the last resort, from whose judgment no farther appeal is permitted; but every subordinate tribunal must conform to their determinations:—

the law reposing an entire confidence in the honour and confidence of the noble persons who compose this important assembly, that (if possible) they would make themselves masters of those questions upon which they undertake to decide, and in all dubious cases refer themselves to the opinions of the judges, who are summoned by writ to advise them; since upon their decision all property must finally depend. See Peer.

Court, Pie-poudre, Curia pedis pulverizatis, an ancient court mentioned in many of our statutes, to be held in fairs, for the rendering of justice to buyers and sellers, and the redress of grievances arising in them.

It had its name, as some say, because it was most commonly held in fairs, and the suitors were chiefly country clowns, with dully feet, called by the French pieds poudres; or, according to others, as Sir Edward Coke, from the expedition intended in the hearing of causes proper to it, before the suit fall off the plaintiff and defendant’s feet; or rather, (as Barrington, in his Observations on the Statutes, says,) fugurges, from the old French pied poul风险管理，a feller; signifying the coum of feet petty chapmen as report to fairs or markets.

The Saxons called it ecaping genov, i.e. court of merchandize; or a court for the decision of disputes relating to buying and selling. It is a court of record, incident to every fair and market. The steward, who has the toll of the market, is the judge: and the trial is by merchants and traders in the fair; so that the injury must be done, complained of, heard, and determined, within the compass of one and the same day, unless the fair continues longer. The court hath cognizance of all causes of debt, and possibly arise within the precinct of the fair or market; and the plaintiff must make oath that the cause of an action arose there. (Stat. 17 Edw. IV. c. 2.) A writ of error lies, in the nature of an appeal, to the courts at Westminster, (Cru. Eliz. 773.) which are now also bound by the statute 19 Geo. III. c. 70. to issue writs of execution, in aid of its process, after judgment; when the perfunctory of the defendant is not within the limits of this inferior jurisdiction:—which may possibly occasion the revival of the practice and proceedings in these courts, which are now in a manner forgotten.

Court of Policies of Assurance, a court formerly submitting, which was erected in pursuance of the statute of Eliz. c. 12,—but the court of arbitration according to this statute having been discontinued, and the assured having been led to bring separate actions at law against each assured, the lord chancellor has been enabled yearly to grant a standing commission to the judge of the admiralty, the recorder of London, two doctors of the civil law, two common lawyers, and eight merchants; any three of whom, one being a civilian or a barrister, are thereby, and by the

Statute 13 & 14 Car. II. c. 23, empowered to determine in a summary way all causes concerning policies of assurance in London, with an appeal (by way of bill) to the court of chancery. But the jurisdiction being somewhat dexterous, as extending only to London, and to no other assurances but those on merchandise, and to suits brought by the assured only, and not by the insurers, no such commission has of late years issued:—but assurance causes are now usually determined by the verdict of a jury of merchants, and the opinion of the judges in that of any legal doubts: whereby the decision is more speedy, satisfactory, and final: though it is to be wished, says judge Blackstone, that some of the parliamentary powers invested in these commissioners, especially for the examination of witnesses, either beyond the fees, or speedily going out of the kingdom, (Stat. 13 & 14 Car. II. c. 22. § 3.) could at present be adopted by the courts of Westminster-hall, without requiring the consent of parties.

Court, Prerogative, a court established for the trial of all testamentary causes, when the deceased hath left bona notabilia within two different dioceses, in which case the probate of wills belongs to the archbishop of the province, by way of special prerogative. And all causes relating to the wills, administrations, or legacies of such persons are, originally, cognizable herein, before a judge appointed by the archbishop, called the judge of the prerogative court.

All citations and decrees of this court run in the name of the archbishop.

This court, for the province of Canterbury, is kept in the common hall in Doctors Commons, in the afternoon, next day after the arches.

The judge is attended by the register, who sets down the decrees and acts of court; and keeps records, &c. all original wills and testaments of parties dying, having bona notabilia.

The place is usually called the Prerogative office; it is now kept in Dean’s court, where, for a moderate fee, a copy may be had of any such will. See Will.

Appeal lies from this court to the king in chancery, who appoints delegates, &c. 25 Hen. VIII. c. 19, though if the delegates revoke a will, &c. they cannot grant letters of administration; for their power is to hear and determine the appeal. (2 Build. 2. Roll. Abr. 233.) The archbishop hath probate of every bishop’s testament, &c. though he hath not bona notabilia out of the diocese: for where a person dies beyond sea, (4 Inl. 335.) the archbishop of York hath also the like court, called his exchequer.

Court of Requests, was a court of equity, of the same nature with the court of chancery, but inferior to it; being principally instituted for the help of such petitioners, as, in confectionable causes, dealt by supplication to his majesty.

Of this court the lord privy seal was chief judge; at first, filled by the masters of requests. It had its beginning about 9 Hen. VII, according to Sir Julius Caesar’s tract on this subject; though Mr. Gwyn says, it took its rise from a commission first granted by king Henry VIII. It was adjudged, upon solemn argument, Mich. 40 and 41 Eliz. in the court of common pleas, that this court of requests was no court that had the power of judicature, &c. And as it had assumed to great power to itself, that it grew burdensome and grievous, it was taken away, with some others, by the statute 16 and 17 Car. 1 cap. 10. (4 Inl. 97.)

Court of Sessions. See Session.

Court of general Quarter-Sessions of the Peace. (4 Inl. 170. 2 Hal. P. C. 42. 2 Hawk. P. C. 32.) is a court that must be held in every county, once in every quarter of a year;
year; which, by statute 2 Hen. V. c. 4, is appointed to be in the first week after Michaelmas day; the first week after the Epiphany; the first week after the close of Easter, and in the week after the translation of St. Thomas, the Martyr, or the 5th of July. It is held before two or more justices of the peace, one of whom must be of the quorum. The jurisdiction of this court, by statute 34 Edw. III. c. 1, extends to the trying and determining of all felonies and trepassses whatsoever; though they follow, if ever, try any greater offence than small felonies within the benefit of clergy; their commission providing, that, if any case of difficulty arise, they shall not proceed to judgment, but in the presence of one of the justices of the courts of king's bench or common pleas, and one of the judges of assize: and, therefore, murders, and other capital felonies, are usually remitted for a more solemn trial to the assizes. They cannot also try any new-created offence, without express power given them by the statute which creates it. But there are certain offences, and particular matters, which, by particular statutes, belong properly to this jurisdiction, and ought to be prosecuted in this court; as the smaller misdemeanours, against the public, or commonwealth, not amounting to felony; and especially offences relating to the game, highways, ale-houses, ballard children, the settlement and provision for the poor, vagrants, servants' wages, apprentices, and popish recusants. Some of these are proceeded upon by indictment; and others in a summary way by motion and order thereupon; which order may, for the most part, unless guarded against by particular statutes, be removed into the court of king's bench, by writ of certiorari factus, and be there either quashed or confirmed. The records, or rolls of the sittings, are committed to the custody of a special officer, denominated the Custos Rotulorum; which see. In most corporation towns there are quarter-sessions kept before justices of their own, within their respective limits; which have exactly the same authority as the general quarter-sessions of the county, except in very few instances; one of the most considerable of which is the matter of appeals from orders of removals of the poor, which, though they be from the orders of corporation-justices, must be to the sessions of the county, by statute 8 & 9 W. III. c. 30. In both corporations and counties at large, there is sometimes kept a special or petty session, by a few justices, for dispatching smaller business in the neighbourhood between the times of the general sessions; as for breaching ale-houses, palling the accounts of the parish officers, and the like.

Court of Commissioners of Sewers, a temporary tribunal erected by virtue of a commission under the great seal, formerly granted pro re nata at the pleasure of the crown, but now at the discretion and nomination of the lord chancellor, lord treasurer, and chief justices, pursuant to the statute 23 Hen. VIII. c. 5. Their jurisdiction is to overlook the repairs of sew-banks and sea-walls; and the clearing of rivers, public streams, ditches, and other conduits, by which any waters are carried off; and it is continued to such county or particular district as the commission shall expressly name. The commissioners are a court of record, and may fine and imprison for contempts (1 Stirl. 145); and in the execution of their duty may proceed by jury, or upon their own view, and may take order for the removal of any annoyances, or the safeguard and conservancy of the sewers within their commission. They may also affix such rates, or fees, upon the owners of lands within their district, as they shall judge necessary; and if any person refuses to pay them, the commissioner may levy the same by distress of his goods and chattels; or they may, by statute 23 Hen. VIII. c. 5, fell his freehold lands, (and by 7 Ann. c. 10, his copyhold also,) in order to pay such fees or affrays. But their continuance is under the control of the court of king's bench, which will prevent or punish any illegal or tyrannical proceedings. Cro Jao. 336.

Courts, Star-nymary, are courts of record in Devonshire and Cornwall for the administration of justice among the tinners. They are held before the lord-warden and his sublittanes, by virtue of a privilege granted to the workers in the tin-mines, to sue and be sued only in their own courts, that they may not be drawn from their businesses, which is highly profitable to the public, by attending their law-suits in other courts. (4 H. 332) The privileges of the tinners are confirmed by a charter, 33 Edw. I., and fully expounded by a private statute, 50 Edw. III., since explained by a public act, 16 Car. I. c. 15. Whilst the tinners are employed in and about the llumaries, they shall be only impleaded in the llanetary court in all matters, excepting pleas of land, life, and member. No writ of error lies from hence to any court in Westminster-hall; as was agreed by all the judges in 4 Jan. (4 H. 231.) But an appeal lies from the steward of the court to the under-warden; and from him to the lord-warden, and thence to the privy-council of the prince of Wales, as duke of Cornwall, when he hath lived or extenuated of the same. From thence the appeal lies to the king himself, in the last resort.

Court of Star-chamber, Camera Stellata, or Chambre des Pfe subtitles, so called, because the roof was originally painted with stars; or more probably because the contracts and obligations of the Jews, before their banishment under Edw. I., which were called ilsars, from a corruption of the Hebrew word fidarat, a covenant, were kept in chests in the king's exchequer. This is of an ancient land-ing; but its authority was very much heightened by Henry VII. and Henry VIII., who appointed, by two several statutes, (3 Hen. VII. c. 1, and 21 Hen. VIII. c. 29) that the chancellor, assisted by others there named, should have power to hear complaints against retainers, embassiers, misdeemers of officers, and other like offences, which, through the power and authority of those who committed them, did lift up the head above other faults; and for which inferior judges were not so fit to give correction, and the common law had not sufficiently provided. The powers usurped by this court were so illegal and so oppressive, that it was finally abolished by statute 16 Car. 1. c. 10, to the general joy of the whole nation.

Court of the Lord Steward, Tresurer, or Comptroller of the king's Household, (4 H. 133.) was instituted by statute 3 Hen. VII. c. 13, to inquire of leony by any of the king's servants, in the cheque-roll of the household, under the degree of a lord, in confederating, compassing, conspiring, and imagining the death or deduction of the king, or any lad or other of his majesty's privy council, or the lord steward, treasurer, or comptroller of the king's house. The inquiry and trial were required to be by a jury, according to the course of the common law, consisting of 12 good men (that is, sober and discreet persons) of the king's household.

Court of the Lord Steward of the King's Household, or (in his absence) of the treasurer, comptroller, and steward of the marshals, (4 H. 133.) was erected by statute 33 Hen. VIII. c. 12, with a jurisdiction to inquire of, hear, and determine all treasons, misprisions of treason, murders, manslaughters, bloodshed, and other malicious and horridings; whereby blood shall be shed or within the limits.
COURT.

units (that is, within 200 feet from the gate) of any of the 
palaces and houses of the king, or any other house where 
the royal person shall abide. The proceedings are by jury, 
both a grand and a petit jury, as at common law, taken out 
of the officers and sworn servants of the king's household. 
The form and solemnity of the process, particularly with 
to the execution of the sentence for cutting out the 
hand, which is a part of the punishment for shedding blood 
in the king's court, are very minutely stated in the said 
statute 33 Hen. VIII., and the several officers of the ser-
vants of the household in and about such execution are 
described, from the ferjeant of the wood-yard, who furn-
ishes the chopping-block to the ferjeant farrier, who brings 
hot irons to bear the stump.

COURT of the Lord High Steward of Great Britain. (4 Inf. 
58. 2 Hawk. P. C. 5, 421.) is a court instituted for the 
trial of peers, indicted for treason or felony, or for misprin-
on of either. (1 Buller, 158.) The office of this great 
magistrate is very ancient; and was formerly hereditary, or, 
at least, held for life, or dom bene se jefirit: but now it 
is usually, and hath been for many centuries past, pro lac 
vice only; and it hath been the constant practice and 
therefore seems now to have become necessary) to grant it 
to a lord of the king's bench, either he is incapable of 
trying such delinquent peer. (Yarb. 13 Hen. VIII. 11. Stannif. P. C. 
152. 3 Inf. 23. 4 Inf. 59. 2 Hawk. P. C. 5. Barr. 
234.) When such an indictment is therefore found by a 
grand jury of freeholders in the king's bench, or at the 
sessions before the justices of oyer and terminer, it is to be 
removed by a writ of certiorari into the court of the 
king's high steward, which only has power to determine it. A 
peer may plead a pardon before the court of king's bench, 
and the judges have power to allow it; in order to prevent 
the trouble of appointing an high steward, merely for 
the purpose of receiving such plea. But he may not plead 
in that inferior court, any other plea; as guilty, or not guilty, 
of the indictment; but only in this court; because, in 
consequence of such plea, it is possible that judgment 
of death might be awarded against him. The king, there-
fore, in case a peer be indicted for high treason, felony, or 
misprison, creates a lord high steward pro lac vice by com-
mission under the great seal; which recites the indictment 
to found, and gives his grace power to receive and try it 
secundum legeum et consuetudinem Angliae. Then, when the 
indictment is regularly removed by writ of certiorari, com-
manding the inferior court to certify it up to him, the lord 
high steward directs a precept to a ferjeant at arms, to 
summon the lords to attend and try the indicted peer. 
This precept was formerly issued to summon only eighteen 
or twenty, selected from the body of the peers; then the 
number came to be indefinite; and the custom was for the 
lord high steward to summon as many as he thought proper, 
(but of late years not less than twenty-three, Kelvyng 56;) 
and that these lords only should sit upon the trial; which 
threw a monstrous weight of power into the hands of the 
crown, and this its great office, of selecting only such peers 
as the then predominant party should most approve of. 
And accordingly, when the earl of Clarendon fell into dis-
grace with Charles II., there was a design formed to pro-
rogate the parliament, in order to try him by a select number 
of peers; it being doubted whether the whole house could 
be induced to fall in with the views of the court. But now, 
by statute 7 W. III. c. 3, upon all trials of peers for 
treason or misprison, all the peers who have a right to sit 
and vote in parliament shall be summoned, at least 20 days 
before such trial, to appear and vote therein; and every 
lord appearing shall vote in the trial of such peer, first 

taking the oaths of allegiance and supremacy, and subscri-
ing the declaration against popery.

During the sessions of parliament, the trial of an indicted 
peer is not properly in the court of the lord high steward, 
but before the court last mentioned, of our lord the king in 
parliament. (Fott. 141.) A lord high steward, indeed, is 
always appointed in that case, to regulate and add weight 
to the proceedings; but he is rather in the nature of a 
speaker pro tempore, or chairman of the court, than the 
judge of it; for the collective body of the peers are therein 
the judges both of law and fact, and the high steward has a 
vote with the rest, in right of his peerage. But in the 
court of the lord high steward, which is held in the rece-
s of parliament, he is the sole judge of matters of law, as 
the lords triers in matters of fact; and as they may not inter-
fere with him in regulating the proceedings of the court, 
so he has no right to intermix with them in giving any 
vote upon the trial: consequently, it hath been held by 
the judges (Fott. 139.) that in case the day appointed in 
the judgment for execution should lapse before execution 
done, a new time of execution may be appointed by either 
the high court of parliament, during its sitting, though no 
high steward be existing; or, in the recees of parliament, 
by the court of king's bench, the record being removed 
to that court. For the right of bishops to sit in the 
court of the lord high steward on trial of indictments of 
treason, &c. See BISHOP.


COURT of Sheriff's Town, or rotation, is a court of 
record, held twice every year, within a month after Easter 
and Michaelmas, before the sheriffs, in different parts of 
the county; being, indeed, only the turn of the sheriff to 
keep a court-leet for each respective hundred. This, therefore, 
is the great COURT-LEET of the county, as the COUNTY-
court is the COURT-baron.

COURT of the Verge. See COURT of the Marches, &c.

COURT, University. The courts of the universities of 
Oxford and Cambridge are of a particular nature: they 
were granted by charters, and confirmed by authority of 
parliament; and they are called the chancellor's courts.

The two universities enjoy the sole jurisdiction, in exclu-
sion of the king's courts, over all civil actions and suits 
whatever, when a scholar or privileged person is one of the 
parties, excepting in cases where the right of freehold is 
concerned. And these, by the university charter, they are 
at liberty to try and determine, either according to the 
common law of the land, or according to their own local 
customs, at their discretion; which has generally led them 
to carry on their process in a course much confirmed to the 
civil law. The jurisdiction of their criminal courts is equally 
extensive with that which concerns the redress of their civil 
Injuries. They have authority to determine all criminal 
offences or misdemeanors, under the degree of treason, felony, 
or mayhem: but whilst the prohibition of meddling with 
freehold still continues, the trial of treason, felony, and 
mayhem, is committed to the university jurisdiction in an-
other court, namely, the court of the lord high steward of 
the university. For by the charter of 7 June 2 Henry IV. 
(confirmed by the statute 13 Eliz. c. 29.) cognizance is 
granted to the university of Oxford of all indictments of 
treasons, informations, felony, and mayhem, which shall 
be found in any of the king's courts against a scholar or 
privileged person; and they are to be tried before the high 
steward of the university, or his deputy, who is to be nomi-
nated by the chancellor of the university for the time being. 
But, when his office is called for into action, such high 
steward...
aflarrant must be approved by the lord high chancellor of England; and a special commissioin under the great seal is given to him, and others, to try the indictment then depending, according to the law of the land and the privileges of the said university. When, therefore, an indictment is found at the assizes, or elsewhere, against any scholar of the university, or other privileged person, the vice-chancellor may claim the cognizance of it; and (when claimed in due time and manner) it ought to be allowed him by the judges of assizes; and then it comes to be tried in the high steward's court; but the indictment must first be found by a grand jury, and then the cognizance claimed. When the cognizance is allowed, if the offense be only a misdemeanor, it is tried in the chancellor's court by the ordinary judge. But if it be treason, felony, or mayhem, it is then, and then only, to be determined before the high steward, under the king's special commission to try the same. The process of the trial is this. The high steward issues one precept to the sheriff of the county, who thereupon returns a panel of eighteen freeholders; and another precept to the beholders of the university, who thereupon return a panel of eighteen matriculated laymen; and by a jury formed de medietate, half of freeholders and half of matriculated persons, is the indictment to be tried; and that in the Guildhall of the city of Oxford. And if execution be necessary to be awarded, in consequence of finding the party guilty, the sheriff of the county must execute the university proceeds; to which he is annually bound by an oath. Many instances occur, one in the reign of queen Elizabeth, two in that of James I, and two in that of Charles I, where indictments for murder have been challenged by the vice-chancellor at the assizes, and afterwards tried before the high steward by jury. The commissioins under the great seal, the sheriff's and bedell's panels, and all the other proceedings on the trials of the several indictments, are still extant in the archives of the university.

These privileges to the universities were granted, that the students might not be distracted from their studies by legal process from distant courts, and other forensic avocations. These privileges are of very high antiquity, both in foreign universities as well as our own. The oldest charter which judge Blackstone has seen, containing this grant to the university of Oxford, was 28 Hen. III., A.D. 1244; and the same privileges were confirmed and enlarged by almost every succeeding prince, down to king Henry VIII., in the 17th year of whose reign the most extensive charter of all was granted. A similar one to this was afterwards granted to Cambridge, in the third year of queen Elizabeth. In the reign of queen Elizabeth an act of parliament was obtained, (13 Eliz. c. 29.) confirming all the charters of the two universities, and those of 14 Henry VIII. and 3 Eliz. by name. This act of Elizabeth is called by sir Edward Coke a "bleded act;" and sir Matthew Hale very fully expresses the fene of the common law and the operation of the act of parliament. (4 Inst. 227. Hale'sHist. c. 43.)

This privilege, so far as relates to civil causes, is exercised at Oxford in the chancellor's court, the judge of which is the vice-chancellor, his deputy, or affessor. From his sentence an appeal lies to delegates, appointed by the congregation; from thence to other delegates of the house of convocation; and if they all three concur in the same sentence, it is final, at least by the statutes of the university, according to the rule of the civil law. But if there be any discordance in any of the three sentences, an appeal lies in the last resort to judges delegates appointed by the crown, under the great seal in chancery.

Courts of Wales, are established over the principality chiefly by 12 Edw. I., and 34 and 35 Hen. VIII. c. 27. Besides courts baron, hundred and county courts, like those in England, a feisin is held twice every year in each county, by judges appointed by the king, (ftat 18 Eliz. c. 8.) to be called the great feissons of the several counties in Wales; in which all pleas of real and personal actions shall be held in the same manner, and with the same extent, as in the court of common pleas at Westminster; and writs of error shall lie from judgment in this (being a court of record) to the court of king's bench. And the proceedings are according to the laws of England.

For the regulation of the practice of these courts in Wales, see ftat. 5 Eliz. c. 25. 8 Eliz. c. 20. S Geo. I. c. 25. § 6. 6 Geo. II. c. 14. 13 Geo. III. c. 51. But the ordinary original writs or processes of the king's courts at Westminster do not run into the principality of Wales (2 Roll. Rep. 141.) though processes of execution does (2 Bulltr. 156, 2 Sunnd. 193. Raym. 265.); as do also all prerogative writs, as writs of certiorari, quo minus, mandamus, and the like. (C. J. 484.) And even in causes before subjects and subjects, to prevent injustice, through false facts or prejudices, it is held lawful (in causes of falsehood at least, and it is usual in all others) to bring an action in the English courts, and try the same in the next English county adjoining to that part of Wales where the cause arises (Vaugh. 413. Hardr. 66.), and wherein the venue is laid. But, on the other hand, to prevent trifling and vexatious suits, it is enacted by statute 13 Geo. III. c. 51. that in personal actions, tried in any English county, where the cause of action arose, and the defendant resides in Wales, if the plaintiff shall not recover a verdict for ten pounds, he shall be non-suited and pay the defendant's costs, unless it be certified by the judge that the freehold or title came principally in question, or that the cause was proper to be tried in such English county. And if any interlocutory action, the cause whereof arose and the defendant is resident in Wales, shall be brought in any English county, and the plaintiff shall not recover a verdict for ten pounds, the plaintiff shall be non-suited, and shall pay the defendant's costs, deducting from it the sum recovered by the verdict.

Court of Wards, a court first erected by king Hen. VIII. (13 Geo. III. c. 46.) and after augmented by him with the office of receivers: but now absolutely taken away and abolished, by a statute made 12 Car. II. cap. 24. together with the opprivicke tenures upon which it was founded. See Inquest of Office.

Court. Bouchet, See Bouchett.
Court. Despatch of the See Departure.
Court. Parejudged the See Forejudged.
Court. Inns of. See Inn.
Court. Perquisiter of. See Perquission.
Court. Suit of. See Suit.
Court. Ambulatory. See Ambulatory.
Court. Rafe. See Base.
Court. Honour, See Honour.
Court. Lasbells. See Lawless.
Court. Wood. See Wood.

Court of Aldermen, in Geography, a cluster of small islands or rocks, near the salt coast of New Zealand, in the Southern Pacific Ocean, about half a league in extent every way, and five leagues from the main land. S. lat. 36° 57'.
manor keeps in his own hands, for the use of his family, and for hospitality. See Manor.

COURT-Roll, a roll which contains an account of the number, &c. of lands depending on the lord of the manor; with the names of the tenants, &c.

Tenants holding by copy of this roll, are denominated copyholders; &c.

COURTAINE. See Curtin.

COURTINIAUX, in Geography, a town of France, in the department of the Loir and Cher; 12 miles W. of Vendôme.

COURTELARY, a small town of France in the department of the upper Rhine with 574 inhabitants. The extent of which it is the chief place has an area of 120 square kilometres, thirteen communes, and a population of 7222 individuals.

COURTENAY, in Latin Curtisiae, a small town of France in the department of the Loir, chief place of a canton in the district of Mâcon, on the river Clari, 100 miles S. of Paris, with 2483 inhabitants. The population of the canton amounts to 7487; its extent is of 24.1 square kilometres and a half, and it has fifteen communes.

COURTEON, a town of France, in the department of the Anjou; 2 leagues S. of Bar-sur-Seine.

COURTESY, or Courtesy of England, tenant by, in Law. See Tenant.

COURTESY, arms of. See Arms.

COURTINE, a small town of France in the department of the Creuse, chief place of a canton in the district of Aubusson. It contains 538 inhabitants. The canton comprises eleven communes, and counts 5712 individuals on a territory of 577 square kilometres and a half.

COURTISAN, or Courtesan, a term of infamy, applied to women who expel their persons, and make a trade of prostitution.

COURTLARS, in Geography, a town of Switzerland, in the territory of Bienne; 7 miles N.W. of Bienne.

COURTMACHSHERRY Bay, on the south coast of the county of Cork, Ireland, lying between the Old-head of Kinsale, and the Seven Heads. The outer bay is sufficiently deep, but there is little or no shelter in it. The inner barbour vessels may lie very safe, but there is a bar, which makes it accessible only to small vessels. N. lat. 51° 36'. W. long. 8° 40' from Greenwich.

COURTNEY, William, in Biography, fourth son of Hugh earl of Devonshire, by Margaret, grand daughter of king Edward I. He was born about the year 1341. He was educated at Oxford, where he applied himself with much diligence to his studies, and relished upon the clerical life. His great family interest opened for him the road to the highest preferment in the church. At twenty-eight years of age he was promoted to the bishopric of Hereford, whence in about five years he was translated to the see of London. In 1376 he distinguished himself by an undaunted opposition to the king's demand of a subsidy, unless he would promise a redress of the injuries inflicted by himself and William Wickham, bishop of Winchester. Shortly after this, the pope having excommunicated the Florentines, di-

rested his bull to be sent to all parts, in which orders were given for the seizure of their property. This bull, the bishop, without consent of the king, published at Paul's Cross, and at the same time, most unwarrantably gave a licence to the populace to plunder the houses of such Florentines as resided in the city of London. For this high offence against the peace of the realm, and the dignity of the sovereign, he was confounded and obliged to submit. In 1377, he cited, on the authority of the pope's mandate, the celebrated Wickliffe to appear before his tribunal at St. Paul's, where he behaved with indecent arrogance, and would have inflicted on that great man cruel severities, had he not been supported by persons of the first rank and power in the country. In 1381 this bishop was raised to the highest office in the state, viz. that of lord chancellor of England, and in the same year he was translated to the archbishopric of Canterbury; he now had opportunity fully to display the temper and spirit which had before been but too well known. He excommunicated one man for a slight offence, and refused him absolution unless he submitted to be beaten with a cudgel, naked in the market places of Wilt Malling, Maidstone and Canterbury. He excited a bitter persecution against the adherents to the doctrines of Wickliffe. Notwithstanding the violence and rancour of his temper, he was constituted the first of eleven commissioners, to whom was entrusted the direction of government for a year to make what reformation they thought fit. Into the hands of a few very few could power have been entrusted with less safety; he met, however, with some salutary checks to the fluides which he was making to an arbitrary exhibition of his authority. He died at Maidstone in 1385, regretted by few of those whose good-will he was bound to cherish. As an instance of firmness and self-possession which archbishop Courteney was always supposed to enjoy, the following anecdote has been mentioned by his biographers. The archbishop and others being assembled with a view of condemning the tenets of Wickliffe; they had scarcely taken their seats when a violent earthquake shook the house. They all determined to proceed no farther, concluding that the buildings were displeasing to the Almighty; the archbishop remained unmoved; he rallied them for their fears, and laid if the earthquake portended any thing, it must be the downfall of whereby; that as noxious vapours are lodged in the earth, and are expelled by violent convulsions, so by their frequent endeavours, the kingdom should be purified from the taint of hereby, which had infected it in every part. Biog. Britan.

COURTONER, in Geography, a small town of France, in the department of Orne, in the district of Alençon, 6 miles E. of Sées. It is the chief place of a canton and has 866 inhabitants. The canton itself has a population of 781 individuals, twenty communes, and a territorial extent of 150 square kilometres.

COURTONNE, la Ville, a town of France, in the department of the Calvados, and district of Lisieux, 24 leagues S.E. of Lisieux.

COURTREY, in Latin Curiarum, an ancient town of France in the department of the Ly, which was formerly a part of Auvergne Flanders. It is the chief place of a district of the same name, which, upon a territorial extent of 832 square kilometres and a half, and in 67 communes, contains a population of 164.375 individuals. Its canton has 23 communes with 51392 inhabitants, and a territorial extent of 280 square kilometres. Courtry itself has a population of 13.674 individuals, not (as the chevalier de Tinseau flatter) 11.674, which is evidently an error of the price. It is situated
situé sur la rivière Lys, 12 miles N.E. de Lille, 15 N.W. de Tournay, et 183 N. de Paris. E. long. 50°. 10'. lat. 51°. 50'. Le nom d'ancien est Courcyck.

The celebrated linen manufactures of Courtray had their rise about the year 1268. They still form the principal trade of the place, which has a sub-prefecture, an inferior court of justice, and a regisler.

The soil of the district of Courtray is uncommonly fertile. It produces the finest and strongest flax in Europe. The inhabitants excel in the cultivating, dressing and spinning of this valuable vegetable. There are also fome logar and soap houses, flax manufactories, breweries, and a manufacture of earthenware, which is said to approach the perfection of the English earthenware.

COURVILLE, a small town of France in the department of Eure and Loiré, on the river Eure, 9 miles W. of Chartres. It is the chief place of a canton in the district of Chartres, and has 1,881 inhabitants. The canton itself has a population of 9,740 individuals, 16 communes, and an extent of 263 kilometers and a half.

COURAPITA, in Botany, Linn. Enc. Jull. 326. Aubl. Guian. tab. 282. (Pckea Pin. Bras. 11 ? Courcropitoum.) Bar. Fr. Equinoxx. 92.) A large tree often more than two feet in diameter, with a thick, cracked, rugged bark. Branches from the summit of the trunk. Leaves a foot long, four inches broad, alternate, ovate-oblong, acute, entire, smooth, even-surfaced, petioled. Flowers in lateral simple erect racemes, large, rosy-coloured, sweet-scented, with a caducous bract at the base of each pedicel, and two others under the calyx. All the parts of fructification are exactly similar to those of Lecythis Linn. (see that article), except the capsule, which is round, woody, brown and rugged; crowned with the remains of the calyx, and with a kind of operculum which does not separate; enclosing under a fibrous pulp another globular, thin, brittle, fleshy-celled capsule, with membraneous partitions which disappear, as the fruit ripens; and containing numerous seeds bedded in pulp. A native of Guiana. The Cocos and Negroes call the fruit cannon balls, which they much resemble, and are in size equal to a thirty-six pounder. The pulp between the capsules may be extracted through a hole made for the purpose, and the inner capsule will move freely within the other. The pulp of the latter has an acid, not unpleasant, taste.

Cous, in Ancient Geography, a city of Egypt, situated to the east of the Nile, formerly the city of Apollo. In consequence of the conveyance of Indian commodities from the Red Sea to the Nile, by the Bactrian route. From Coiffe, probably the Pharaoh's Portus of Potêmka, to Cous, a journey of four days, the Nile, from a small village, became the city in Upper Egypt next in magnitude to Faiyum or Old Cairo. This town, which, like Cofts, was indebted for its importance to the trade with India, possessed great opulence during the dominion of the Arabs. Since the Turks have become masters of Egypt, and this beautiful country has been laid waste by a pacha and 24 beys, Cous has undergone the fate of her rival. The trade from the Red Sea by Coiffe is removed to Gicé or Keré, farther down the river than Cous; and the latter place is reduced to a collection of cottages, inhabited by a few Copts and Arabs. In modern times, all the commodities of India, imported into Egypt, are either brought by sea from the Suez, and thence carried on camels to Cairo; or are conveyed by land-carriage, by the caravan returning from the pilgrimage to Mecca.

COUSANGE, in Geography, a small town of France, Vol. X.

in the department of the Jura, chief place of a canton, in the district of Lons Le Soumain, with 1,152 inhabitants. The canton itself has 24 communes, a territorial extent of 130 kilometres, and a population of 11,890 individuals. There are in this canton quarries of beautiful grey marble spotted red.

Cousel, a small town of France, in the department of Sarthe. It is the chief place of a canton, in the district of Birkenfeld, and has 1,290 inhabitants. The canton itself comprises 43 communes and 8,919 inhabitants.

COUSERANS, or Couserans, a small territory of France, in what was formerly called the province of Gascony, the lord of which was a vicount. It now forms part of the department of Ariège.

Cousin, a term of relation and kinship; applied to those who are thereby related from two brothers or two sisters.

The term is ordinarily derived from consanguineus; though Menage brings it from congenius, or congener, q. d. ex caulce genero.

In the full generation they are called cousin german, i.e., next cousins; in the second, second cousins; and in the third and fourth, cousins in the third and fourth degree.

In the primitive times, it was allowed cousin germans to marry, to prevent their making alliances in heathen families; but Théodorus the Great prohibited it, under pain of death; on pretence that they were, in some sort, brothers and sisters, with regard to each other.

Paternal cousins, are those sprung from relations on the father's side. Maternal, those on the mother's.

COUSINS, Quater. See Quater.

Cousin is also a title of honour, which kings bestow on peers, or nobles, foreign princes of the blood, cardinals, and the principal persons of their state.

COUSIN, J. E. in Biography, a French painter of the 17th century. He was a native of Soissons, near Sens; but the year of his birth is not known. We learn, however, that he married the daughter of the lieutenant-governor of Sens in 1680. He refused principally at Paris, and painted with increasing reputation in the succeeding reigns of Henry II., Francis II., Charles IX., and Henry III., who severely accorded him marks of their favour. We are not told if he had a mortal enemy; but it is probable that he improved himself from the studies he made on the works of Primaticcio at Fontainebleau.

Cousin is considered as the earliest historical painter of any note which France has produced. It is to be regretted, that many of his finest compositions were painted upon glass; there exist, however, some of his productions on canvas, which evince an elevated conception and considerable powers of execution. His heads are expressive, and the tout-ensemble of his pictures striking and agreeable; though not wholly devoid of a dryness of manner. The last judgment, in a church at Vincennes, is his most celebrated performance. The paintings on the windows in the church of St. Gervais at Paris, representing the Martyrdom of St. Lawrence, the Story of the Samaritan Woman, and another sacred subject, are likewise the works of this artist. Nor was his genius confined to the pалlet: the monument of admiral Chabot, in the church of the Celestines at Paris, shows him to have been a consummate sculptor. The year of his death is unknown; but we learn that he lived to an advanced age. Felibien, Extrait des differens Ouvrages, &c.

COUSINET, CATHERINE ELIZABETH, an engraver, born at Paris in 1726. This lady received instructions from Caré and Telfard, and was afterwards married to Louis Ff Lempereur,
Lamproeur, which connection strengthened her natural bits for the grave. Madame Contienet has engraved many plates in a very neat plot and, amongst others, "La Pyramide de S. S., et les trois Colonnes de Campo Vaccino," by Pannini; "De part de la Chaloupe, & l'heureux Passage," a pair from Verut. Huber, Heineck, Straun.


So. 1 C. latifolia. Aubl. tab. 36. "Leaves ovate; peduncles branched." A tree seventy feet high, and three in diameter, branched near the top. Leaves about five inches long and three broad, alternate, oval, entire, firm, with prominent nerves, even-surfaced, green above, reddish underneath, pinnate; stipules long, solitary, caducous. Flowers collected in spherical heads, on common peduncles, which form a kind of corym. Fruit yellowish, confiding of numerous small seeds, attached to a spherical pulpy receptacle. 2. C. argyrophylla. Aubl. tab. 563. Leaves ovate-oblong; peduncles simple. Leaves three inches long, and near two broad, with fewer nerves than in the other species. Fruit larger, solitary, or growing in pairs, each on a distinct simple peduncle. Both the species are natives of Guiana.


Gen. Ca. Cal. Perianth five-toothed. Cor. monopetalous; tube short; nerve with four lanceolate divisions. Stam. Filaments four, attached to the upper part of the tube, between the divisions of the border; anthers oblong. Thy. Germ inferior, roundish, crowned by a disk; style in the centre of the disk; stigma five or four-cleft. Peric. Berry egg-shaped, umbilicated, violet-coloured, one-celled. Seed solitary, roundish, coriaceous.

385. C. violacea. A shrub seven or eight feet high, with a stem about three inches in diameter; branches and branchlets opposite. Leaves decussated, large, oval, acuminate, entire, smooth, shining, on short petioles; stipules oval-acute, opposite, intermediate. Flowers white, in small terminal, almost sessile clusters. The pulp of the berries is yellow, and adheres to a shell which contains the seed. A native of Guiana.

COUSSAY, in Geography, a town of France. in the department of the Vienné, and district of Loudun; 3 1/2 leagues S. of Loudun.

COUSSERGUES, a town of France, in the department of Averun; 20 miles S.E. of Rhodese or Rodos.

COUSSEY, a small town of France, in the department of the Velges, in the district of Neufchâteau; 3 miles from that city. It has only 644 inhabitants; and the canton, of which it is the chief place, contains 26 communes, and a population of 7,359 individuals, upon a territorial extent of 204 kilometres and a half.

COUSSIN, H., in Biography, an engraver. We know nothing more of this artist than that, about the year 1760, he engraved some plates at Aix in Provence, and at Lyons, from Puget, Rembrandt, and some other masters. Strutt, Heinecken.

COUSSINET, in Architecture, the stone that crowns a pediment, or pier; or that lies immediately over the capital of the impost. Its under-side is level, and its upper curved; receiving the first rize or spring of the arch, or vault.

The word is used also to signify an ornament, in the Ionic capital, between the abacus and echinus, or quarter-round; and which serves to form the volutes. It is thus denominated from its representing a pillow, or cushion, propped by the weight over it, and bound with the strap, or girdle, called, by Vitruvius, a balbus.

COUSSINET, Fr. a bag. Formerly a French soldier wore a port of bag on his left side, beneath the corset belt, where the butt of the musquet comes when carried. There were hooks for hanging it to. This term signifies also a wedge made use of for supporting a mortar on its bed.

COUSSON, in Geography, a river of France, which runs into the Loire, near Naus.

COUSTILLE, an offensive arm, which some soldiers made use of in the 15th century, and towards the time of Charles VI., longer than an ordinary sword, and cutting from the guard to the point, very thin, and of three faces or edges. A long poignard.

COUSTILLER, a person so called, from being armed with a coufille, or long poignard. The coufilleer was the valet, who accompanied a cavalier or homme d'armes, independent of the page.

COUSTOU, Nicolas, in Biography, a sculptor, born at Lyons in 1658. He received the rudiments of the art from his uncle, Antoine Coyszevov, who sent him to Rome, and placed him under the tuition of the cavalier Bernini. Under this master he made such rapid progress in the art, that on his return to France he was esteemed one of the best sculptors in that kingdom. Coulont established himself at Paris, where his increasing reputation soon procured him the condescension of Louis XIV., who granted him a pension, and conferred upon him many other marks of the royal favour. In 1702 he was made professor of the royal academy at Paris; and, after executing many works with undiminished success, he died in that city at the age of 71.

Moit of the statues which decorate the church of the invalids at Paris are from the chisell of Coulont. There are also three statues by this artist, from which Cochin has made engravings. They are, 1. "Le Chasseur qui le regarde;" 2. "Une Nymphe de Chasses;" and, 3. "La Chasse a l'Oie." Abeced. Pittor. Heinecken.

COUSTOU, Guillaume, born at Lyons in 1677, was brother to the preceding artist, and having, like him, been some time instructed by Antoine Coyszevov, at a proper age, was sent to Rome, where he made such progress in sculpture that he promised to equal his brother Nicolas. Returning to France, he went to Paris, where he chiselled many fine statues for Louis XIV., and many of the French nobility. After the death of Louis, he continued to enjoy the favour of the duke of Orleans, regent of France. He became member, and afterwards director, of the royal academy of sciences at Paris; which office he continued to enjoy until his death, which happened in the year 1749. Abeced. Pittor. Heinecken.

COUSU, in Heraldry, has the same signification as Roman, vis, for a piece of another colour or metal placed on an ordinary, as if it were fixed on; which the word, in the French language, naturally implies; because the additional piece is not properly on the field, but in the nature of a thing sewed on. This is generally colour on colour, or metal on metal, contrary to the general rule of heraldry.

COUTABOU, in Geography, a town of Asia, in the country of Thibet; 25 miles E. of Manas-Hotun.

COUTARDE, in Botany, Aubl. See Hydroella spinosa.

COUTANCES, in Latin Constancia, in Geography, an ancient
ancient town of France, in the department of La Manche, situated between the small rivers Soule and Bulsorne, partly on a hill and partly in a plain, about 200 miles W. of Paris. It is 48 N.E. of St. Malo, 36 W. of Caen, and 27 N. of Avranches; in W. long. 1° 32'; and N. lat. 49° 2' 50''; not far from the sea. It has a fish-prefect, a bishop, three counts of justice, and a register office. From the remains of an aqueduct, supposed to be Roman, Coutances is conjectured to be a place of great antiquity. It was formerly the capital of the Cotentin in Lower Normandy. Its population amounts to 8,507, and that of its canton, which contains 8 communes and a territorial extent of 57,000 hectares and a half, to 14,847 individuals.

Coutances is the chief place of a district, which, upon a territorial extent of 157,000 hectares, counts 129 communes and 130,500 inhabitants. This district produces abundance of corn, pulse, and garden fruits: its pastures are excellent. It is famous for capital Normandy horses and good milking cows. There are also much cotton and woollen and yarn, linen, and ticking, and parchment, manufactured in this district; the principal trade is with corn, butter, poultry, horses, cattle, woollen, lace, and parchment.

Coutarea, in Botany, Aubl. See Portlandia hexandra.

Coutchéng, in Geography, a town of Añá, in the country of Cores; 37 miles S.W. of Tóin techen.

Coutchéng, a town of China, of the third rank, in the province of Pe-teche-li; 6 leagues S.S.W. of King.—Also, a town of Añá, in the country of Cura; 22 miles S.S.E. of Ke-ang-techen.

Coutchéng-Keón, a small Chinese island. N. lat. 36° 55'' E. long. 132° 14''.

Coutteaux, Des, a lake of Upper Canada, running about S.W. by W. 12 miles, and from a quarter to two miles wide, from which is a portage of 65 paces. A deep bay runs E. three miles from the well end, where it is discharged by a rapid river; and after running two miles W., it again becomes still water. In this river are two carrying places, the one 15, and the other 190 paces. From this to the portage des Carpes is one mile N.W., leaving a narrow lake on the E. that is parallel with the lake des Coutteaux, half its length, where is a carrying place, used when the water in the last-mentioned river is too low. The portage des Carpes is 590 paces, from whence the water spreads irregularly between rocks, five miles N.W. and S.E. to the portage of La Bois Blanc, which is 180 paces. Then follows the lake of that name, improperly so called, pays Mr. MacKenzie, as the native name it is the "Lake Pafcow Minne Saguain," or Dry Berries.

Coutthlaugh, from the Saxon couth-knowing, and outlaugh, outlaw; a person who receives a man outlawed, and cherishes or conceals him: for which offence he was, in ancient times, subject to the same punishment with the outlaw himself. Bratt. l. 3. tr. 12. c. 32.

Couttián, in Geography, a town of China, of the third rank, in the province of Po-Kien; 32 miles S.S.E. of Kien-nings.

Coutufre, in Botany, Aubl. See Exacum flaeccium ranoufianum.

Ohn. We shall here observe, once or twice, that many of Aublet's genera not having yet received clastic names, we have reluctantly preferred his barbarous nomenclature. This, indeed, has already been done by La Marek and Jullien; but the latter professedly regards it only as a temporary diminution. "Quemam," says he, "forte ulterius recognitio delenda & adducenda confinibus; unde, rudia hæc, nonnum mutator horum nominar.

Coutouetou-hotun, in Geography, a town of Chinee Tartary; 215 miles E. of Pekin. N. lat. 10° 38'. E. long. 113° 23'.

Coutra, a long or lake of Ireland, in the county of Galway, near the borders of Clare, which is said to possess all the beauties that hills, woods, and islands can impart to water. It is about 3 miles S.E. from Gort. Beaumon.

Coutras, a small town of France, on the river Drome, in the department of Gironde, 12 miles N.E. of Libourne, and about 480 S.W. of Paris; in N. lat. 46° 4'. It is the chief place of a canton, and has 3,600 inhabitants.

The canton itself has an extent of 197,000 hectares and a half, 13 communes, and a population of 6,657 individuals. Coutras is remarkable for a victory which Henry IV. of France gained here, in 1587, over the army of the League.

Couture d'Argenson, a town of France, in the department of the Two Sevres, and district of Meles; 8 leagues S.E. of Niort.

Couture, La, a town of France, in the department of the Straits of Calais, and district of Bethune; 13 league N.E. of Bethune.

Covay, John, in Biography, a designer and engraver, born at Arles about the year 1622. This art is may be ranked as a good second-rate engraver. He managed his graver with facility and boldness, in a style much resembling that of Vallemans. He has engraved both historical pieces and portraits, as well from his own compositions as from those of Raffaello, Guido, Annibale Caracci, and other painters, and frequently marked his plates with a cypher, composed of the initials of his name. Amongst his best prints we may enumerate the following: 1. "Louis XIV., a cheval, prédicé de la Renommée," from J. Bourdon; 2. "La Vierge Marie, qui présente des Célllets à l'Enfant Jésus, afin lui fer Genoux," from Raffaello; 3. "St. Jean Baptiste dans le Desert," from the same; 4. "St. Jean tenant par le Demon de la Chair, le fait fuir en lui montrant le Crucifix," from Guercino. The time of Covay's death is not known. Huber, Strutt, Heinecken.

Couvercle, an eminence in Geography, the glaciers of Chamouny in Switzerland, which consists of a mighty extraordinary rock of granite, having the appearance of a large, irregular, multitudinal building placed on a mountain; the ascent to which along the ice is very laborious, but perfectly secure. Near the base of this elevated rock three stupendous valleys of ice present themselves to view; viz. the glaciers of Talféré to the left, in front of that of Echaut, and the Tacu to the right; all uniting in one great valley of ice, called the "Glacier des Bois," which stretch under the feet of the observers, and appear surrounded and ornamented by the rugged needles. From the top of this eminence the view comprehends the same sublime scenes offered at its base; but considerably heightened and enlarged—th the stupendous expanse of frozen ice, bounded by the most pyramidal rocks, and terminated by Mont Blanc, the Atlantic of the globe. In this situation, the eyes of the spectator, himself entirely enclosed between ice and snow, repose on a triangular rock, clothed with grass and Alpine plants, and darting up like a fertile island in the midst of a desolate ocean. This is known by the name of the "Garden," and exhibits a curious contral to the surrounding dreariness.

Couverte, in Heraldry, denotes something like a piece of hanging falling over the top of a chuit, or other ordinarie, so as not to hide but only to be a shadow to it.

Couver, Fr., a Shelter, or Cover, in Military Language, a term expressive of safety, protection, or security. To advance under cover of the guns, is to advance against an enemy, who does not approach you on account of the
fire from your guns, whether they be on board of vessels, or on works, or batteries. It also signifies whatever shelters any movement, or renders it imperceptible; as under cover of the night, under cover of a wood, dyke, town, eminence, &c. A work defended by another work is covered. The corridor, or great road of the rounds, is covered by the glacis, which serves as a parapet to it. A camp is said to be covered by a river, by a mora, by a wood, by a hill, &c. A gate of a place is in like manner said to be covered by a revetment.

**COUVERT, or COVERT, in Rural Economy,** a word frequently applied to a place that is sheltered, not open or exposed, as from broomwood, &c.

**COUVERTURE d'un Camp, d'un Logement.** See COVÉL.

**COUVÉ, or COVEY, in Rural Economy,** a term often provincially applied to a cover of turzze or other low shrubby plants, kept for the preservation of game. It also signifies a flock of partridges.

**COUVIGNAN, in Geography,** a town of France, in the department of the Aupe, and district of Bar-Sur-Aube; 1 league E.S.W. from Bar-Sur-Aube.

**COUVIN,** a small town of France, chief place of a canton, in the department of the Ardennes, district of Rocroy. Its population amounts to 2406, and that of the canton to 9504 individuals. The canton has 15 communes, and a territorial extent of 220 kilometres.

**COUVIN, a town of Germany,** in the circle of Weifphalia, and bishopric of Liege; 15 miles S.S.W. of Liege.

**COUVRE-FACE, Fr. Cover-face.** This term is used by some engineers, and among others by Cohorn, to denote or express the counter-guard. Others, and particularly Montalbert, mean by couvre-face general, or general cover-face, a complete second line of investment.

**COUVRE-FRAN.** See COUFE.

**COUXEA, in Geography,** a town of Africa, on the coast of Upper Guinea; in the country of Sierra Leona. N. lat. 5° 30'. W. long. 9° 24'.

**COW, or COW-MULL,** a river of Hindooostan, formed by the junction of the Dilen, which rises to the N. or N.W. of Ghizini, and of the Semil, which falls into the Dilen, near Gurdaz. The confluent river, after this junction, takes the name of Cow, and, pursuing its course towards Nagar, or Nughz, receives near that place another river, which flows from the quarter of Chandah. Major Renneel concludes, on the better authority, that the waters of Ghizini and Gurdaz form the great river of Bungul, which passes by Nughz, and Bunion, and discharges itself into the Indus at Deenkote; and also that this river is the one named Cow, or Cow-mull, by the oriental historians and geographers. This river Renneel proves to have been the ancient Cookhens; which fee.

**Cow, in Rural Economy,** an animal of the nearest cattle kind, which is well known as supplying milk, one of the principal articles of food for man. Of this useful creature there are several different breeds and varieties, which differ materially in their habits and economy, as to suit the different situations and purposes of the farmer. Some of the breeds are remarkable for their docility and tameness, while others possess a considerable degree of wildness and ferocity. It is obvious, that in providing cow-muck, much attention is requisite, in order to suit the animals to the different intentions which they are to supply, as well as the pasturage on which they are to be fed. Where milk is the primary object, they should be carefully selected from such cows as have been found to afford, not only good milk in a large proportion to their size, but continued it for a considerable length of time. In the view of cheeze, quantity of milk must be chiefly attended to; but in the case of butter, the quality of the milk will be more necessary to be regarded than the quantity. Where the intention is breeding, form and breed will require the particular consideration of the farmer.

In all cases, it will also be proper that the male should be of a proper age, in order to his possessing due vigour, and be in good keep.

There is likewise much care and attention demanded in the rearing of the young flock in all these views. See Calf.

The principal distinguishing marks of a good cow are said to be these: wide horns, a thin head and neck, dewlap large, full breast, broad back; large deep belly; the udder capacious, but not too flabby; the milk veins prominent, and the bag tending far behind; teats long and large; buttocks broad and flabby; tail long and pliable, ifs proportional to the size of the carcass; and the joints short. To these outward marks may be added a gentle disposition, a temper free from any vicious tricks, and perfectly manageable on every occasion. On the other hand, a cow with a thick head and short neck, prominent back bone, slender belly, tail tucked up, small udder, or a flabby bag, short teats, and thin buttocks, is to be avoided, as totally unfit for the purposes either of the dairyman, the suckler, or the grazer.

There are different kinds of these animals preferred in different situations and forts of land. The most valuable cows are perhaps, however, those which are bred in Lancahire, Yorkshire, Staffordshire, and upon the strong land in other parts of the kingdom, which, being of the largest size, yield great store of milk, when turned on pastures, with which the grass is in sufficient abundance, or fed with a constant supply of such food as, from its succulence, conduce much towards the nutriment of the creature, and enables her to give large quantities of milk, such as turnips, grains, garden vegetables, &c. But as these large cows require a more ample provision than would fall to their share on the generality of farms it would seem that they should not be had by those farmers, whole land is not of the most fertile kind; for, on ordinary keep, a small cow will yield a fairer profit than one of the Yorkshire or Staffordshire breed, which, being bred on the belt kind of land, would be starved, where a Scotch and a Welsh cow would find an ample supply of food. The Lancashire, or long-horned forts of cows have been greatly improved by the exertions of the breeders in the midland districts. And those of the Yorkshire, or short-horned kind, by Sir William St. Quintin, and others.

The Herefordshire cows are large in size, handomely, and sleek in the coat, but are only suited to the richer forts of land where the herbage is sweet and abundant. They usually afford a pretty fair proportion of milk, being rather suited to the making of buter and cheeze. When they come to be fed, they generally fatten well and weigh heavy.

The North Wiltshire cow is also of a large kind, being adapted to the same forts of land, on which they afford an abundant supply of good fine flavoured milk, which is productive in both cheeze and butter. They have likewise the property of fattening well when they have done milking.

The North and South Wales cows do well on the poorer forts of lands, the former, though small, give a large quantity of milk, and are very profitable. The latter also, on mudding forts of pastures, afford a good supply, and on good ones their produce is abundant.

The Kiloe fort on similar poor descriptions of land are likewise an excellent kind for milk; and have the valuable property of fattening well after the milking feason is over.

The
C. O. W.

The Suffolk duns, which are small and without horns, are by many highly esteemed for the use of the dairy, being highly productive in milk, though, perhaps, rather deficient in the supply of butter, when compared with the Lancashire fort.

The Alderney cows are a fort which are much extolled for affording fine rich milk, though late in quantity, than some other kinds, the butter being excellent in flavour. And they do tolerably well on almost all sorts of land. When fattened, they produce very good beef. See Alderney Cattle.

The Devonshire breed is likewise a handsome fort, somewhat larger than the Alderney, thriving well. under middling keep, flanking the winter season well. They are fed by some to be a profitable fort for the dairy. See Dairy.

There is scarcely any farm which does not admit of keeping one or more of these animals of some sort or other; but regard should always be paid to the condition of the soil. Indeed, so necessary are cows in the economy of a farm, and their produce so very advantageous, that they can hardly be dispensed with by the farmer.

The cow goes nine months with young, and but rarely produces more than one calf at a time. Where the herd is extensive, an account should always be kept of the time when each cow takes the bull, that she may be dried off at a reasonable distance of time before the expected term of gestation be completed. The most proper time for the cow to be dried off is about two months before her calving, when she ought to be suffered to lie quiet, and not be brought up with the other cows at the milking or feeding-times; for, if a calf be continued in milk nearer to the time of calving than the period above allotted, it will not only greatly injure her future progeny, by rendering it weakly and flabby, but will also have an ill effect on the health of the cow herself. Under good keep, the may, however, be milked some weeks longer.

It has, indeed, been stated by the author of Præcice Agriculture, as probable, that "much in this business must depend on the manner in which they are kept; as where they are well fed, they may be continued in milk till within a week or two of their calving, without suffering any injury whatever from it; but in the contrary circumstances, it may be better to let them run dry for a month, six weeks, or more, according to their condition, in order to their more fully recruiting their strength. It appears, however, if not improbable, that the longer the milking is continued, the more free the cows will be from indurations and other affections of the udder; which is a circumstance deserving of attention. Where only one or two cows are kept for the supply of a family, it is likewise useful to know, that by good feeding they may be continued in milk, without any bad consequences, till nearly the time of calving. We have tried this method several times, without experiencing the least possible injury to arise from it. And in the Agricultural Survey of the West Riding of Yorkshire, it is stated, that no advantage was found, on trial, to result from allowing the cows to go dry two months before calving. They have there been kept in milk till within ten days of the time of dropping the calf."

When a cow is four months gone with calf, the fact may easily be ascertained by pressing upon her off-flank, where the calf will be felt to kick against the hand. These animals generally show their desire for the male, or taking the bull, by riding upon the other cows, and by the turgid appearance of their bearings. They should be well attended to at these periods. And they may be known to be near the time of calving by springing at the udder, or at the bearing. By the term springing at the udder, is meant the collection of liquid in the bag, which, a few weeks before the time of gestation is accomplished, assumes, in some degree, the appearance of milk, and may be drawn from the teats. To spring at the bearing, is when this part is more than ordinarily large and distended. Heifers are said, by some farmers, to spring soonest at the bearing, and old cows at the udder. Cows are sometimes found to link their calves; and whenever this accident happens, care should be taken to keep the blind apart from the rail of the herd for a night or two, lest the other breeding cows should, by a kind of involuntary impulse, unfortunately do the same. This may be owing to accidents of different kinds; but some cows are particularly liable to abortions; and where this happens, they should never be continued long in the herd, as being unlikely to yield any considerable degree of profit to the owners of them under such circumstances.

During the winter season, if the weather be very cold, wet, and uncomfortable, the cows which are mostly expected to calve, ought, Mr. Banister says, to be lodged at night in a large, convenient out-house, or some other place, for a week or two previously to calving; as it may be the means of saving the life of the calf, and perhaps of its dam likewise: for, when the calf drops in the yard or field under such circumstances, the hazard of its perishing through the inclemency of the weather is very great, and it may considerably endanger the life of the cow. But if from inattention, or other causes, the creature should catch cold by calving abroad in sharp winter-nights, which may be perceived by a refusal of her food, and by her trembling joints, the ought immediately to be driven into a warm shed, together with her calf, and fed with sugar and ale, and with the bell and sweet-lard; and should not be suffered to drink any cold water. By this treatment she will commonly, in a few days; but should the disorder hang about her, she will be composed of aromatic cordial substances may be given, or comfortable cordial drenches.

The milch-cow is generally in her prime at five years old, and will commonly continue in a good milking state till ten years of age, or upwards; but this depends greatly on the constitution of the animal; some cows, like other animals, exhibiting marks of old age much earlier than others. They can, however, seldom be kept with advantage to nearly such an age.

It has been observed by the author of the Synopsis of Husbandry, that there are four different purposes to which the produce of this animal is particularly applied: the churn, cheese, sucking, and the immediate profit of the milk. This last, near large towns, is frequently carried on to a very considerable extent; so as to form businesses which is usually denominated cow-keeping. See Cow-Keeping. Where butter is the principal object, such cows should always be chafed as are known to afford the best and largest quantities of milk and cream, of whatever breed they may be. But the quantity of butter to be made from a given number of cows must always depend on a variety of contingent circumstances, such as the line and goodness of the heals; the kind and quantity of the food; and the distance of time from calving. As to the first, it may be very correctly be mentioned that a large cow will give greater flows of milk than one of a smaller size; though cows of equal size differ greatly as to the quantity of cream produced from the milk of each: it is, therefore, on thosse cows whose milk is not only in large abundance, but which, from a peculiar inherent richnes, yields a thick cream, that the butter dairy-man is to place his chief dependence; and where a
cow is deficient in either of these respects he should be parted with, and her place supplied by one more proper for this use. As to the second particular, namely, the kind and quality of the food, those who would wish to profit by a dairy ought to provide for their cows hay of the finest quality, or a superior goodness to the common sort to be given them in the depth of winter, and this in an unlimited degree that they may always feed till they are perfectly satisfied. And when the weather will permit, the cows should be indulged with an outlet to marshy or low meadow-grounds, where they may feed on such green vegetables as are present; which is far preferable to the practice of confining them the whole day on dry meat, and will enable them to yield greater plenty of milk, and will give a fine yellow tinge or colour to the butter even in the winter season. As to those who confine their milch cattle to the yard in the winter time, when the weather will admit of their being turned abroad, or who fodder them chiefly on straw, they cannot expect to reap much advantage from these animals, whether kept for the pail, or for fucking: for, if the creature be refused a due allowance of wholesome and nutritious diet, how can they be expected to yield any great abundance of milk? As to the third particular: those cows will certainly give the largest quantity of milk, and of a superior quality, which have calved the latest. Hence the necessity of providing a breed of cows, which, from their conformation, bid fair to fill the pail at every meal; and of limiting the number of the herd to the size of the farm, that they may always be supplied with succulent pasture; and from hence hippewife it is suppos'd may be adduced the propriety of attending to the peculiar property of each cow, that such as are not kindly for the pail, either by giving over their milk too early, or by continuing too long dry, may be turned off for fattening: while those which yield the richest cream, are quiet and of a good temper, and which continue to give their milk to the latest period, which are not apt to flink their calves, and which are generally healthy, may be kept on the farm with the greatest contentment, till they become incapacitated by age to yield any further profit. From these cows it is, too, that such female calves should be made choice of as are intended to be weaned, for the purpose of continuing the flock. This is a very eligible mode of practice, and deserves the attention both of the fucking-farmer and the dairyman, as it will always be found that the cows which are bred on the land will be more kindly, under similar circumstances, than those which are bought in from other pastures; and having sprung from a proper and reputable stock, will rarely fail to answer the utmost expectations of the breeder, and in the end repay all the care and expense he may have been at in the rearing and providing of them.

These farmers, it is added, who would make the utmost advantage from cows, either as fuckers, dairy-men, or milk-fellers, should always provide a bull to run in the herd to obviate the perpetual trouble of driving them perhaps a mile or more to the pail, and in order to prevent the loss and inconvenience of their becoming frequently barren in consequence of the male not having been near them. One bull will generally be sufficient for from twenty to thirty cows. These male animals are common in their prime at two years old, and should seldom or never be suffered to continue longer in a state of virility than to about the fifth year; as after that time bulls which before were gentle and lazy quietly in the cow-pastures are apt to contract vicious dispositions, and become very milchavenous and unmanageable. Whenever this happens, they should of course be immediately castrated, and made what are termed sogs or flags. See Stag and Seg.

It is farther stated, that in the vale district of Breckinghshire and in Oxfordshire, very great numbers of cows are kept for the purpose of making butter. The fertile lands in these counties are capable of maintaining a breed of large cows, which yield great quantities of milk; so that it is not an uncommon circumstance for one farmer to keep a herd or dairy of fifty or sixty cows, and to collect a quantity of cream sufficient to fill a barrel churn of fifty gallons or more in a week. The butter made from this cream is sold by the farmer or dairy man to persons who make it their business to purchase this article at a rated price from Michaelmas to Lady-day, and at an inferior rate or price from Lady-day till Michaelmas; the butter thus collected being sent to London every week in waggons, it is confided to the dealers, who retail it to the consumer, and no small profit from this traffic accrues to the waggons owner and the butter-merchant. This sort of butter is mostly made up in lumps containing the quantity of two pounds each, and for that reason it has obtained the name of lump-butter. Its flavour is peculiarly sweet and agreeable, which is chiefly owing to the goodness of the pasture upon which the cows are fed; for this intrinsic merit would in vain, it is said, be fought for in butter made from ordinary pastures, how great former may be the skill of the dairy-woman: And that though the grazes should be equally luxuriant, the cows of the same breed, and the cream in like abundance, yet would a decided preference still remain in favour of the vale fed cows; for, as a fattening beast on rich land will thrive much quicker than on thin soils, though the herbage be shorter on the former than on the poor ground, so will cows give a larger store of milk, and that of a more nutritious quality, when fed on deep fertile meadows than if depauprated on those of inferior goodness or quality.

But it is well known that, besides the butter above-mentioned, large quantities are sent to the London markets from other places. Epping butter has long been held in the highest estimation; and great quantities are manufactured in Cambridgeshire, and the adjoining counties. The Cambridge butter is sent in small pails; and has an additional quantity of salt mixed with it, to ensure its keeping for ten days or a fortnight, and is generally perfectly free from any rancid taint. And farther, Yorkshire, Lincolnshire, and other neighbouring counties, where the land is rich and fertile, bywise supply large quantities of butter, which is faetd and put into tubs for the southern markets.

It is stated further, that in all those counties where the profit of the cow arises chiefly from the subfrequent manufacture of the butter, the whole care and management of the articles rests with the housewife; so that the farmer has little else to do but to superintend the depaupration of his cattle the milking, churning, and, in short, the whole internal regulation of the dairy, together with the care of marketing the butter, where the fame is made up wholly for home consumption, falling alone upon the wife. In this department of rural economy, a large portion of skill, of frugality, cleanliness, industrious, and good management, is required, that without them the farmer, with the utmost care and the most dilftious attention to his busines without doors, may be materially injured through the imprudence or extravagance of his wife, in the conduct of his domestic concerns. This observation will indeed hold good in many other parts of business which pass through the hands of the milkers in a farm-house; but there is none wherein the farmer may be so greatly afflicted, or so materially injured, by the good conduct
C O W.

conduit or want of care in his wife, as in this fort of dairying. See BUTTER, and DAIRYING.

Where the making of cheese is the principal object of the farmer, the management, in respect to the cows, must be nearly the same as that described above. See CHEESE, and DAIRYING.

Where the cows are intended for the purpose of suckling calves, the farmer should, it is observed, provide himself with a breed of cows suited to the quality of his land. Where the farm abounds with fertile pastures, watered with wholesome streams, and not far distant from the yard, so that the cows may be turned immediately out of the sucking-house upon their feed, the benefit will be in every respect superior to what can be expected from an arable farm, or where the green land is in a small proportion to the ploughed; for, in this latter case, the cows must depend for their sustenance and support chiefly on the artificial grasses, as they are called in many places; such as clover, trefoil, rye-grass, &c. which, besides that they are not properly adapted to the nature of this animal, will be subject to the further inconvenience of being frequently arrested in their growth by a dry summer; at which time, likewise, the ponds, if there be any in the uplands, will most probably be dry, so that the cows will be cut off from the enjoyment of solacing themselves in the water;—an indulgence which they are very fond of, as in this retreat they find a shelter and protection from the continual flings of the flies and other insects, and flake their thirst at their pleasure. Besides, by feeding in the uplands, they acquire a habit for roaming, and thus are eternally committing devastations in search of fresh aliment, not being easily restrained by hedges, or other dry fences, under such circumstances.

It has since, however, been found by further experience, that not only those grasses, which have been usefully nominated artificial, may be advantageously applied to a food for milk-cows, but various other vegetables of luxuriant growth, such as the turnip, cabbage, borage, and many other sorts. See DAIRYING.

In cafes where the land is fertile, so as to produce throughout the summer great store of pasture, and a sweet and wholesome fodder for the winter consumption, it may, as has been already shewn, be advisable to purchase the larger breed of cows, such as those which are bought up from Yorkshire, Staffordshire, &c. But on poor soils, or where the arable land is in a much larger proportion than the pasture, so that the cows must depend in a great measure on the production of the own grasses for their support, the small North Wales heifers will be found to answer every end desired from them much better than those of a heavier and more weighty kind. See Calf-Suckling, and DAIRYING.

In order to the proper management of cow-stock, the cow-houses or sheds should be of a size adapted to the number of the beasts to be contained in them. Each cow should be driven into the house at suckling-time, and her head confined in a proper manner, having some fodder lying constantly before her, and a space left between every beast. When they become once accustoms to this kind of restraint, they will without any trouble come into the places defined for them, when the calves may be suckled with the greatest ease and facility, and with the least possible waste of time. See CATTLE-Sheds, and CALF-Pens.

It has been remarked by a late writer, that "where it is not the practice to bind up the cows in houses constructed for the purpose, especially during the winter season, which feems by much the belt method, warm well-heltered yards with open sheds should be provided, in order to protect the animals, and prevent their being exposed to the weather; as by such means they will afford much larger supplies of milk than where they are left in a state of exposure to wet and cold in open dirty yards, as is often the case. The bottoms of yards for this use should be well laid with some forts of hard materials, and the dung be frequently scraped off them, so as to keep them as dry and clean as possible. They should also have plenty of good clean water to drink at pleasure. If due attention be not bestowed in these respects, which is seldom done, it is impossible that the advantages that might otherwise be the cafe can be derived from them."

In respect to the management of cows, so far as food is considered, it has been well suggested, "that care should be taken to keep them constantly in good condition, as, when they are ever suffered to become very lean and flint in the winter season, it is impossible that they can be brought to afford a large quantity of milk, by getting them into perfect condition in the summer months; as where cows are lean at the period of calving, no management afterwards is ever capable of bringing them to afford, for that season, any thing near the proportion of milk that they would have done, if they had been supported in proper condition during the winter. Food of the most nourishing succulent kinds should therefore, be regularly given in suitable proportions, in the cold inclement months; and the animals be kept warm, and well supplied with pure water." See Cow-Keeping.

Cow-Bane, a name provincially applied to a weed (arthuca cynapium), which is found in arable fields, and is noxious to man; but which cows, horseth, sheep, goats, and swine, eat without injury. According to Withering, it is likewise noxious to geese. It should be kept from spreading in corn fields.

Cow-Clogs, a term often provincially used to signify the cleared lumps of hard dirt which hang to the buttocks of cattle, and other animals which are tied up in the house during the winter season.

Cow-Ground, a word provincially used in some districts to signify a cow-pasture.

Cow-Herd, a term applied to a person whose office it is to attend upon and take care of the herds of cattle, in districts where they run in common pastures.

Cow-Herd Milk, a term applied to such as is obtained from the cow-herd.

Cow-House, the name of the building or place where cows or other cattle are kept, in order to protect them from the effects of the winter season. See CATTLE-Sheds.

Cow's Island, in Geography. See VACHE.

Cow-Keeping, in Rural Economy, a term signifying the business or practice of keeping cows, with a view of deriving profit from the sale of the milk in large and populous towns. The business of dealing in milk has been considerably increased during the last half century, so as to be at present in many situations a very extensive concern. In the county of Middlesex, the number kept by the London dealers in milk, are stated by the intelligent author of the Agricultural Report of that district, to stand as below:

<table>
<thead>
<tr>
<th>Middlesex</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Totthill-fields</td>
<td>285</td>
</tr>
<tr>
<td>Knightsbridge</td>
<td>550</td>
</tr>
<tr>
<td>Edgeware Road</td>
<td>338</td>
</tr>
<tr>
<td>Paddington</td>
<td>3915</td>
</tr>
<tr>
<td>Tottenham-court Road</td>
<td></td>
</tr>
<tr>
<td>Battle-bridge</td>
<td>4785</td>
</tr>
</tbody>
</table>

Carried over
### COW-KEEPING

<table>
<thead>
<tr>
<th>Village/City</th>
<th>Brought forward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hoxton</td>
<td>4785</td>
</tr>
<tr>
<td>Ratcliff</td>
<td>-</td>
</tr>
<tr>
<td>Mile-End</td>
<td>150</td>
</tr>
<tr>
<td>Lime-House</td>
<td>255</td>
</tr>
<tr>
<td>Poplar</td>
<td>429</td>
</tr>
<tr>
<td>Bethnal-Green</td>
<td>180</td>
</tr>
<tr>
<td>Hackney</td>
<td>70</td>
</tr>
<tr>
<td>Bromley</td>
<td>200</td>
</tr>
<tr>
<td>Bow</td>
<td>600</td>
</tr>
<tr>
<td>Shore-Ditch</td>
<td>160</td>
</tr>
<tr>
<td>Kingland</td>
<td>100</td>
</tr>
<tr>
<td>Odd cows</td>
<td>234</td>
</tr>
<tr>
<td>Deptford</td>
<td>681</td>
</tr>
<tr>
<td>Rotherhithe</td>
<td></td>
</tr>
<tr>
<td>Greenland-Dock</td>
<td></td>
</tr>
<tr>
<td>New-Croses</td>
<td></td>
</tr>
<tr>
<td>Bermondsey</td>
<td></td>
</tr>
<tr>
<td>Lambeth</td>
<td>619</td>
</tr>
<tr>
<td>South-Lambeth</td>
<td></td>
</tr>
<tr>
<td>Kennington-Bridge</td>
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<tr>
<td>Cold-Harbour</td>
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<td>Peckham</td>
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<tr>
<td>Peckham-Rye</td>
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<tr>
<td>Newington</td>
<td></td>
</tr>
<tr>
<td>Camberwell</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>850</strong></td>
</tr>
</tbody>
</table>

It has been stated, that in the neighbourhood of different villages round the metropolis, as Hackney, Ilfington, Paddington, and many others, the cow-keepers secure every inch of land they can meet with; and that some of them have remarkable large flocks of these animals. One of these, on the different farms which he pollinizes in those neighbourhoods, has nearly 1000 cows, having often been afflicted to have had more than 950, and once to have been within one of a thousand. The half number of these cows are said to be worth the vast sum of 30,000 l., affording an annual produce of about 35 l. each, which is 35,000 l., and as the net profit of each cow will be shown below to be 6 l., it is obvious that the keeper of 1000 cows must derive the large annual amount of 6000 l. from them: an immense sum, when the smallness of the trouble is considered. And as the population in these different places has considerably increased since the period at which this statement was made out, it would seem not improbable but that the number at present stands much higher. The fecundity of grass-land in the immediate vicinity of the metropolis has now rendered it necessary for this sort of dealers to remove to a greater distance than was formerly the case, where they are enabled to do by means of light carts, and a peculiar mode of conveying the milk in a fort of tin jars slung in them.

It is sufficiently obvious, that the practice of the milk-dealer is only capable of being carried on with adequate profit and advantage in cafes where abundance of all sorts of food, both for the summer and winter support of the animals, can be readily procured, and in situations where the population is such as to afford a ready and certain demand for the produce at all seasons. Under other circumstances this system of management cannot be pursued with any chance of success.

In the execution of this plan of management, a circum-

flunce on which much depends, is that of providing such cows as are properly adapted to the intention, which is that of a full supply of milk, without much regard to the quality. Of course, the cows to be chozen for this purpose are, such as are capable of yielding the largest possible quantity of milk, with the least possible consumption of food. But though the profits of the cow-farmer must materially depend upon this circumstance, it does not appear to have been much regarded, or in any way subjected to the test of experiment. The nature of the keep, in respect to quantity and nutritive properties, will, in a great measure, lead to the proper choice of cows; as they should never be disproportionate large to the nature and kind of food which they are to receive. As in most cafes of this sort of management the food is both rich in its quality, and capable of being applied in an abundant manner, the large breeds may be had recourse to with the greatest chance of profit in general, though, under particular circumstances, the smaller forts may now and then be employed. This seems to agree pretty well with the actual state of the flock in most instances of this kind of farming, as we find the large short-horned Holderness breed commonly employed, though, in particular cafes, the smaller breeds, as the long-horned Suffolk and polled breeds, are introduced.

In the focking of cafes, the great consideration should, of course, be that of the means of support which the farmer has in his power for the animals; but there are some other circumstances which would, in part, dictate his conduct. It has been stated, by a writer of considerable information on the subject, that, though the large breeds of cows may at first, while the supply of food is of the green succulent kind, and in large proportion, afford a greater abundance of milk, yet that the smaller forts often continue to yield a more regular supply for a much greater length of time, which more than compensates the difference in the quantities on the commencement of the milking in the former fort.

In regard to the form, such cows should, of course, be selected for this purpose as are wide in the horn, when of those breeds which are horned; thin in the head and neck, which have the dewlap not too pendulous or hanging down too much; the carcase rather flattish, with much flesh on the rear, the hips wide, and somewhat pointed, having the buttocks round and fleshy; thin in the legs, but with short joints; the udder capacious, without being fleshy, and stretching well backwards, with the milk veins large, and strikingly apparent; the teats large, and of a good length, having the surface skin fine and even.

It is likewise a matter of much consequence in this sort of management, to have the cows of a tame and gentle disposition.

As the quantity of the milk, as already observed, is the primary object in this practice, all such cows as do not afford it in an adequate proportion to the consumption of food in their keep, should be immediately parted with, as not affording a due profit in this system.

If we recur to the actual practice of the Middlesex cow-dealers, we shall find, that they almost wholly and invariably have recourse to the large short-horned Yorkshire breed, which they purchase of the dealers or jobbers in cattle at the different fairs and markets in the country districts, and especially near the capital, where new supplies from the country are weekly exposed, which enables them to keep up their flocks with much facility and convenience. They are procured by these dealers at first from the breeders, when from three to four years old, and in calf. There is likewise another way in which they are provided for this use by the milk-dealers.
milk-dealers in the metropolis, which is, by commissaming
proper persons to purchase the necessary lots at the different
country fairs and markets, in order to their being sent up
to them under the care of drovers.
The prices of these cows have of late been greatly in-
creased, being at present seldom less than from 15 to 25 or
30 guineas per cow. And in other smaller lots not less
than from 10 to 15 or 18 guineas the cow.

It is not the practice of the cow-keeper to breed, except
in particular cases, where the cows are remarkable for
giving large quantities of milk. They rarely pay any fort
of attention to the quality of the bulls which are employed
in this fort of business. See Cow.
The cheapest flour for the buying in of these animals is,
when there is plenty of food in the autumn, or about the
commencement of the winter. Valt savings may often be
made by having them purchased at this period.

In this system of practice, where any number of cows are
kept, it is always proper to have bulls running along with
them, as by such means they are not only induced to take
them more readily, but with greater certainty, and the in-
conveniences of driving them for distance avoided. One
bull is fully sufficient for 20 or 25 cows.

The author of the Synopsis of Husbandry has afforded
a variety of remarks on this kind of management, some of
which may be interesting to farmers of this description.

In cafes," he says, "where the chief desigh of profit from
cows is the immediate sale of the milk, which, near a
large town, is certainly, he thinks, the most advantageous
plan, if the circumstances of the farm admit of its being
carried on. And, in general, he thinks, the shorter the
distance between the cow-yard and place of sale, the
more conveniently will this branch of business be con-
ducted, and the larger the profits arising from it; so that
such farmers as live in the outskirts of a large town enjoy
the fullest advantage from the sale of their milk, and possess
a preference in every respect over those who live at the
distance of a mile or more from the place of sale. Such
farmers will always, he supposes, give greater satisfaction
to their customers, by supplying them with milk fresh from
the cow, than the cow-keeper who lives at a distance, and
who has no such advantage; for the milk, having been per-
paps half an hour or upwards undulating in the pails, will,
by that means, have lost much of its original sweetness,
and be totally unfit for keeping: nay, in hot weather, the jol-
ting of the pails will often have so much injured its quality,
as to render it scarcely fit for present use, allowing it to
have been brought neat and unadulterated from the cow.
Another disadvantage with which the country milk-man
has to struggle, is, he observes, the greater expense in
carrying; to which may be added the unbounded confi-
dence he is, from necessity, compelled to place in the
person who carries the milk, which it is great odds he abu-
ses, by partaking no inconsiderable part of his receipts.
Yet, notwithstanding these disadvantages, a farmer, even at
a two miles distance from the place of sale, may find, he
conceives, a larger profit accruing from this practice of selling
the milk, than either from fowling or making butter,
provided he can always meet with a ready sale, and at a
good price; but if he has his milk frequently returned on
his hands, or cannot, even in theummer season, fed it at
three-pence a quart, it will by no means be prudent to
follow the practice. But lately, from the enormous in-
crease of the price of land about large towns, there can be
no doubt but that the system of the cow-keeper or milk-
dealer, may, in many instances, as noted above, be con-
ducted with sufficient profit at several miles distant from
towns where the consumption of milk is large, as is at pre-
sent the case with those forts of dealers in the metropolis.
And from the lands at such distances being less impreved
with dung, it seems not improbable but that the milk may
be of a better quality and flavour, in consequence of the
natural grasses being more predominant, and of a less luxu-
riant growth.

It is necessary in this business that great regard should be
paid to the nature and size of the cows; which, as has been
already observed, should be adapted to the flate of the
pasture, or other kind of food on which they are to be fed.
Where the grass is good and fertile, as has been already
noticed, it may be flocked with the large Holderness and
Staffordshire beals, which will yield great store of milk at
every meal: but such weakly cows demand a much more
ample supply of nourishment than those of inferior size; to
that not only the grafs in the summer must be in the greatest
abundance, and produced from pastures of the most fruitful
foil, but the winter provision be also in equal proportion.
When the weather will not admit the milking cows to be
turned into the pastures in the day-time, and during the
nights whilfe they lie in the yard, they ought by no means
to the ffent in hay, which should be the produce of the
richell meadows, sweet and well made. Succulent food
likewise of different kllods should be provided for them, in
order to increase their milk, and enable them to yield the
greater profit. To this purpose, turnips should annually be
raised as contiguous to the yard as circumstances will admit,
and a tub should never be wanting in the cow-house filled
with fresh gravis. These grains and turnips should be given
alternately to the cows in troughs fixed under their yokes;
and the cows should be driven into the house some time be-
fore milking, and allowed to remain there a small time after-
wards. Neither is this allowance of succulent food less ne-
cessary for cows of inferior size; which, although they will
thrive on more barren pastures in the summer, and with good
well-flavoured straw in the winter teafon, require but a small
portion of hay, and will eat greedily of ordinary fodder, and
yield milk in abundance where cows of a larger carcase
would refoe the meat, or fall off their milk: yet even in
this case the like cautions are to be observed of baiting their
small cows and turnips in the same manner as is the winter
pans in the richell meadows and pastures.

But it is to be remarked, that these small cows confume either in grazs, dry fodder, or other
provender, a far less quantity than is required for the first
mentioned kind, and are therefore better adapted to every
farm; those excepted in which the pastures are of the richell
and mott fertile kinds. Among cows of this kind, kept for
this purpose, there are degrees of size; but of these smaller
beals, those are to be accounted as proper for pastures
where the foil is of a middling nature, such as the general
run of marshes on the borders of the Thames, in Kent and
Essex, which, when fattened, will arrive to fifty fio. But
those of a more ordinary kind, Welsh cows of forty-eight
or fifty fio. are sometimes to be preferred; some of which
are very good, and in proportion to their size will yield
large men of milk; though it must be confessed, that
these cows of a weight between this Welsh breed, and the large
Staffordshire and Holderness kind, such as mentioned above,
are in general the most probable; and where the land is to
poor as not to afford a maintenance for these, it will rarely be
found advisable to flock such ground with cows in the view
of profiting from the pail.
The necessity of giving the milch-cows grains during the
winter months, is another reason, he thinks, why the land
on which it is proposed to carry on this business should be
situated near a large town; since it is necessary that these

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grains should be fetched twice or three times a week, in order that the cows may have them perfectly sweet; for they will refuse the diet with whining when it has acquired an ill taste, which it will do in a very short time, when the water is suffered to continue in the grains.

The cow-keepers in the neighbourhood of London, where they make great use of this sort of feed for the subistence of their herds, have contrived a method of keeping the grains in pits, which being filled with them, and trodden tight down, are then covered over; and by this method they are preferred from the month of March till the summer, when the brewing is discontinued, at which time they are dug out perfectly sweet; the ears at top, and a thin covering from the surface of the grain, which may have contracted a mouldiness, having been first taken off. They may in like manner be kept in tubs or casks, which having holes bored at the bottom to let off the moisture, are to be placed on sapers six or eight inches from the ground.

By being closely closed down in these tubs, the moisture passes off through the holes at the bottom; and the grains by these means may be preferred for feeding cows, the cows acquiring any ill taste: though to a country cow-keeper it will seldom be necessary to keep them so long, since the ordinary use to which he has for grains it as a winter food. In the summer time there will be a sufficient quantity of grafs, the most natural aliments, and with which the cow-keepers about London cannot be supplied in a degree equal to the demands of their numerous herds. By this method of keeping grains in these reservoirs, the farmer may supply himself with this necessary article at times when he has little other employment for his horses; as in a frost, or in rainy weather, which may render the operations of the field impracticable or inconvenient: and whilst the weather permits the plough to work, it will not be necessary to take the horses off for the performance of these occasional jobs.

The above method of managing the cows is principally practised by the country milk-dealers; a considerably different system being pursued by the cow-keepers in the vicinity of the metropolis. It is stated in the excellent Survey of that county by Mr. Middleton, that there is even in summer, and when the grass is in the greatest entry, for the cows are regularly fed with grain, and though the quantity of milk is the same as usual, by no means added to its quality. The general allowance is forty-five quarters of grains per week (at 1s. 6d. per quarter) to every twenty-five cows. They are given them twice a day; and they have, besides, two mals of turnips and hay. Some cow-keepers have tried salt; he says, mixed with the grains, more with a view to prevent the grass being a found state, than from any consideration as to the health of their flock, or the improvement of the quality of the milk. It is acknowledged that the cows eat the grain so mixed with great avidity; but the proprietors not getting an adequate return for their trouble and expense, he does not find that it is now much practised.

And it is added in the same report, that during the night the cows are confined in stalls. About three o'clock in the morning each has a half-bushel basket of grains. From four o'clock till half past six they are milked by the retail milk-dealers, who contrive with the cow-keepers the milk of a certain number of cows, at one standing and tenpence for eight quarters; this however, varies with the distance from town. When the milking is finished, a bushel basket of turnips is given to each cow; and very soon afterwards they have an allotment, in the proportion of one to ten cows, of the most grassy and mist meadow hay which had been the most early mown, and cored of the greenest colour. These several feedings are generally made before eight o'clock in the morning, at which time the cows are turned into the cow-yard. About twelve o'clock they are again confined to their stalls, and served with the same quantity of grains as they had in the morning. About half past one o'clock in the afternoon the milking commences in the manner above described, and continues till near three, when the cows are again served with the same quantity of turnips, and, about an hour afterwards, with the same distribution of hay as before described.

This mode of feeding generally continues during the turnip season, which is from the month of September to the month of May. During the other months in the year they are fed with grains, cabbages, tares, and the foregoing proportion of rowen, or second-cut meadow-hay; and are continued to be fed and milked with the same regularity as before described, until they are turned out to graze, which they continue in the field all night; and even during this season they are frequently fed with grains, which are kept sweet and capable for a considerable length of time by being buried in bran made for that purpose, as described above.

It is stated by the writer of the Agricultural Survey of the West-riding of Yorkshire, that in the vicinity of the large manufacturing town of Leeds, in that district, the cow-keepers in some cases feed their cows with cut-grafts in the summer season, and brewers' grains, without straw, in the winter. And that near the populous town of Sheffield, the most experienced in this sort of business, make use of five hundred weight of indeed dust in mixture with three hundred weight of bran, in the course of the week, for every six cows; while others apply a quarter of a peck of beans, with a peck of grains, as one feed for one cow three times during the day. And though these are expensive methods of feeding, they are found to answer well in some cases.

In the feeding of cows it has been attempted to prove by different correct calculations, that a larger profit may be obtained by keeping them in the house, and supplying them with green and other proper food, than in the common mode of permitting them to collect their own food in the pastures; in support of which the writer of the Agricultural Report of the West-riding of Yorkshire states the following. Cows kept upon red clover and rey-grafts, tied up in the house in the day time during the summer season, only putting them out after milking in the evening for the sake of air and water, one acre of the former has been found to go as far as two under the pasturing system; besides the affording a larger supply of milk. The largeness of the quantity of manure that is thus raised, and its superior richness, are supposed to compensate for any additional trouble or expense that may be incurred in the cutting and removing the food to the cattle yards.

In respect to the use of cut-grafts for foiling or feeding in the yards; Mr. Middleton has, however, offered some remarks in opposition to the late recommendations of different writers. He conceives that the practice of cutting and carrying the grafs, to be confined in the fields by the cows instead of permitting them to collect it themselves, can only be supported without exhausting the land so as to leave nothing for the potatoes, in such cases as where the extent of the country is not mainly occupied; or in such flooded meadows as can be covered with water occasionally in the summer and other seasons. In all other circumstances such a system would, it is supposed, quickly prove ruinous to the land.

Besides, it is suggested that the great labour and expense of such a plan must render it uneconomical; as one person so employed with a horse and cart, could not bring in the produce of many acres, and at the same time attend the works.
cows, though it would annually fland the farmer at the rate of more than an hundred pounds. It is also supposed to have other disadvantages, though it prevents the injury of poaching. It is stated that a man might cut two acres in the week, and cart the grats, suppose eight tons, into the yards, besides attending the cattle, which is equal to the consumption of about six head of cattle, and supposing this should be continued fifteen weeks, thirty acres would be cleared once, or ten acres three times. Of course it would require such a number of men as could not be conveniently procured. It is concluded, therefore, to be one of those closet systems which cannot be profitably reduced to practice over more than a very few acres of land, and then only when done without any addition of men or horses.

In the practice of J. C. Curwen, Esq. M. P., as detailed in the fifth volume of Communications to the Board, it was found highly advantageous and economical to supply the cows immediately after milking in the morning, with a pound of flaked chaff each, which had been prepared the preceding night, and which now become sufficiently cold for use. And this was followed by three pounds of oil-cake. The animals were then turned out to water; when, on returning to their sheds, green food was given them in the proportion of about a stone. Before the period of milking in the evening another feed of chaff was given, and after it a second feed of green food; and at six o'clock a foddering of straw in the quantity of six or eight pounds was administered.

The daily expense of feeding per cow in this way is thus stated:

<table>
<thead>
<tr>
<th>flo. lb.</th>
<th>d.</th>
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<tbody>
<tr>
<td>2</td>
<td>Of green food $\frac{c}{2}$</td>
</tr>
<tr>
<td>2</td>
<td>Of chaff, &amp;c. 2</td>
</tr>
<tr>
<td>3</td>
<td>Of oil-cake 3</td>
</tr>
<tr>
<td>8</td>
<td>Of straw 1</td>
</tr>
<tr>
<td>4 11 each</td>
<td>$G_3$</td>
</tr>
</tbody>
</table>

But it is suggested that, if the cake was well reduced to powder, a pound and a half, or two pounds at most, would be full as efficient, which would reduce the expense to not more than five-pence the day. The cake is found to have a great effect in the production of milk as well as in improving the condition of the cows, especially when combined with the chaff. With this treatment the produce was about eight quarts wine measure per day, with a breed of small cows. The use of cole as a green food was likewise found to have a wonderful effect in promoting the quantity of milk.

In feeding cows with hay and ground oats, the quantity and expense were found to equal thus per day:

<table>
<thead>
<tr>
<th>flo. lb.</th>
<th>d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hay -</td>
<td>1 6</td>
</tr>
<tr>
<td>Green food 2</td>
<td>0</td>
</tr>
<tr>
<td>Ground oats 4</td>
<td>0</td>
</tr>
<tr>
<td>3 10 which costs $o_3$</td>
<td></td>
</tr>
</tbody>
</table>

It would seem from Mr. Curwen's trials, that by combining some sort of stimulant dry food with that of a green kind, a very beneficial effect was produced in the increase of the quantity of milk. And the London cow-keepers have long been aware of the advantage derived in this system from the use of soft green rowen hay or fuel as has heated but little in the stack.

In regard to the manner of applying such food as is employed in this system of practice with the most success and benefit, it has been observed by Dr. Dickson, in his system of Practical Husbandry, after noticing the several kinds of succulent and other food which is had recourse to in the common methods of supporting the animals, that by such means much stimulant is thrown into the sytem, and a continual varied juicy matter is thrown up, by which a large increase of milk is produced. And that "as the 6 former articles thus employed must have less effect in exciting the secretory organs of the animals, in proportion to the frequency of their use, the utility of varying their food as much as possible, is rendered sufficiently obvious. On the same principle there are, says he, probably various other subsistances, as well as these, that might easily be made use of with great benefit; but too few experiments have yet been made with them in this view to lead to any useful conclusions." And there is another circumstance which he suggests as worthy of the consideration of the cow-keeper in the keeping of his cows, which is that of the dry food being properly proportioned to that of the green or succulent kind, as, where this is not well attended to, the cows by being kept in too lax a state of the bowels, from the great tendency which such materials have to run off in that way, may afford a much less quantity of milk than would otherwise be the case. We know, continues he, from repeated experiments that considerable loss is sometimes taken place in this manner. In the foddering of the cows, he likewise advises, that, "regard should also be had to supply them with the food in such a way as to excite the secretions in as regular a manner as possible. In this view too much food should never be given at one time, but supplied more frequently, as three or four times, or oftener, in the course of the day." It is suggested that "this practice will likewise have an advantageous effect in having the fodder more cleanly eaten up."

Great regard should likewise be paid to the watering of the cows in this plan of management, as much depends upon it in respect to the quantity of milk which is afforded. It was found by an experienced cow-keeper, that the more clean and pure the water was, the more the secretion of milk was excited. The London milk dealers must of course refuse great lots in not attending more to this point, as their cows are often permitted to drink the moly filthy, flagrant, putrid water, in the ponds which adjoin their cow-yards. Where running streams are not at hand, this inconvenience may often be easily obviated by the contrivance of proper troughs or cisterns, which might be filled from pipes or the roofs of the buildings.

In this practice the cow-keepers in London never fuddle the calves, but in from two to three or four days, as the circumstances may be, they are sent to the markets to be sold, as they could not be disposed of before. Of course the cows are left in full milk from within a few days of the time of their calving, which is a great advantage. This method cannot however be followed in country situations in general, from there being little demand for the new dropped calves, they must consequently be fuddled by the milk-dealer.

The length of time which the cows are kept in this practice, is not certain or regular, being mostly determined by the milking, such as are good milkers being continued much longer than where the contrary is the case. When they fail in their milk they should probably always be disposed of as soon as possible. In this system it is obvious, that young cows must constantly afford the best profit; but they may perhaps be profitably kept till the third or fourth calf, and in some cases even longer.

In the practice of the London milk-men, the cows are often fuddled to remain in the dirty yards, without being sufficiently...
sufficiently protected from the weather, even during the winter season; but this should constantly be avoided by having proper sheds, or other low buildings, constructed for them, and to which, if stalls for tying them up were added, it would probably be so highly convenient and beneficial as to repay the expense in a very short time. The influence of the atmosphere is so greatly prejudicial to these animals, that they cannot be too much guarded against its effects. Mr. Curwen found it produce a difference in the milking in a small number of cows of more than two gallons at a meal.

The yards in which they are contained should be sufficiently spacious, in proportion to the number of cows which are to be kept, in order that they may be airy, being well enclosed with low fences, and the bottoms laid with some hard durable form of materials. Mr. Middleton has recommended for this purpose lime rubbish and chalk, which, he says, makes a firm found bottom, by which preaching is prevented, and the dirt rendered easily capable of being scraped off, and the yards be kept clean.

<table>
<thead>
<tr>
<th>May 21, 1789</th>
<th>Pints.</th>
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</thead>
<tbody>
<tr>
<td>First meal,</td>
<td>9½</td>
</tr>
<tr>
<td>Second ditto,</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td><strong>22 ½</strong></td>
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<table>
<thead>
<tr>
<th>May 22</th>
</tr>
</thead>
<tbody>
<tr>
<td>First meal,</td>
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<tr>
<td>Second ditto,</td>
</tr>
<tr>
<td>Third ditto,</td>
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<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>May 23</th>
</tr>
</thead>
<tbody>
<tr>
<td>First meal,</td>
</tr>
<tr>
<td>Second ditto,</td>
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<tr>
<td>Third ditto,</td>
</tr>
<tr>
<td>Fourth ditto,</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>October 22, 1789</th>
</tr>
</thead>
<tbody>
<tr>
<td>First meal,</td>
</tr>
<tr>
<td>Second ditto,</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>October 23</th>
</tr>
</thead>
<tbody>
<tr>
<td>First meal,</td>
</tr>
<tr>
<td>Second ditto,</td>
</tr>
<tr>
<td>Third ditto,</td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>October 24</th>
</tr>
</thead>
<tbody>
<tr>
<td>First meal,</td>
</tr>
<tr>
<td>Second ditto,</td>
</tr>
<tr>
<td>Third ditto,</td>
</tr>
<tr>
<td>Fourth ditto,</td>
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<tr>
<td></td>
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</tbody>
</table>

To have afforded any satisfactory results, these experiments should have been much longer continued and more varied in the periods of drawing the milk, as well as carefully compared with the quantity and kind of food on which the cows were fed, and by thus determining what depends on simply withdrawing the milk, and what on the nature and quantity of the food consumed, the influence of the practice might be ascertained.

In this intention it has been advised to milk the cows when well fed in the summer season, three times in the course of the day at equal distances of time, by which some have supposed the augmentation in the quantity of the milk to be nearly one-half of the whole quantity, while others consider it as much less: but were a third more obtained, the additional trouble and expence would be fully compensated. More experiments require to be made in this view to fully decide the benefit that may be thus derived.

The practice of cow-farmers, in general, is merely that of having the milk withdrawn twice in the period of twenty-four hours, the operation being performed about seven o'clock in the morning, and five in the afternoon. But with milk-dealers it is usual to have it performed at from four to about six in the morning, and from a little after one to three in the afternoon. In these cafes more frequent milkings would probably not answer to the cow-keeper. But the business should be so executed as to have milk be left undrawn, as otherwise not only less in the milk, but in the cows becoming more quickly dry may be sustained. The work should also be performed as expeditiously as possible, and with great circumspection in regard to cleanliness. A good milker is capable of finishing from six to eight cows in the hour.

In the milking of the cows in this, as well as the dairy practice, greater attention is perhaps necessary than is commonly bestowed upon the business, to procure the greatest possible quantity of milk. It has been advised on the well known physiological principle of the secretions of animals, being increased in proportion to the frequency of withdrawing the fluid, that more frequent milkings should be had recourse to, in order to augment the quantity of milk in these animals.

By thus producing a habit in the organs, which perform this office, it is not improbable but that the quantity afforded, in a given time, may be greater than in other cafes; but in order to effect the business perfectly, great care and attention are requisite, both to the feeding and to exactness in the times of milking, as well as to the drawing away every drop of the fluid at each operation. With the view of subjecting this matter to the test of experiment, Mr. Macro has recorded the following trials in the twelfth volume of Mr. Young's Annals of Agriculture.
of milk, which is afforded by each cow, is, on an average, about nine quarts in the day, which is equal to, per annum, 3285 quarts.

The calf takes part of the milk, it is observed, for the first two or three days, during which time it would not be feasible; and there is a falling off for a few days before the cow calves: these occasion a deduction of about eighty-five quarts, leaving the annual feasible produce of each cow about 3200 quarts, which, at the present price of two-pence the quart, amounts to £36 1 3d.

To which sum adds a calf, for two or three days old, from 25s. to 31s. 6d. the medium is about 1 6 8.

And it gives the total annual produce, per cow, about £38 0 0.

which, on 8500 cows, amounts to 317,400l. per annum.

Expenditure of Keep.

The cow-keepers feed their cattle very highly, in order to their producing the greatest possible quantity of milk. The expense is nearly as follows:

Turnips 7 cwt. or 14 buffels per week each cow, at 3d. is 0 3 6.
Brewer's grains, 7 buffels, at 5d. or more, is 2 11.
Hay, one truss and a half, per week, at 2s. 6d. 0 3 9.

The expense of the food of a cow per week is 0 10 2.

which is nearly equivalent to 26l. 13s. per annum, and that sum taken from the produce in milk and calf, as before stated, of 38l. leaves £11 7 0.

The price here charged for the hay may perhaps, be, deemed low; but it will not appear to be so when it is taken into the account, that the cow-keepers sow their land two or three times in a season, as their object is to procure the most grassy and soft hay they can. It is likewise not burthened with market charges.

In Mr. Curwen's method of keeping cows, the expenses and profits for the space of 220 days, with cows of the smaller kind, are thus stated:

<table>
<thead>
<tr>
<th>Dr.</th>
<th>Cr.</th>
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<tbody>
<tr>
<td>To keep for 220 days at 6d. per day,</td>
<td>5 10 0</td>
</tr>
<tr>
<td>To labour in attendance of cows</td>
<td>2 0 0</td>
</tr>
<tr>
<td>To lofs, milk, &amp;c. &amp;c.</td>
<td>3 0 0</td>
</tr>
<tr>
<td><strong>£ 10 10 0</strong></td>
<td></td>
</tr>
</tbody>
</table>

It is stated further, by the author of the Middlesex Report, that "the consumers pay four-pence halfpenny per quart to the retailers. If the latter were to sell the milk pure and unadulterated at this price, it would yield them a profit of 6d. per cent. But, in order to discover the actual profit of the retailers, we must add eight-pence for cream short-measure, and the extraneous articles mixed with it, which increases 3s. the usual price of eight quarts, to 31s. 8d.; and, as it costs them only 1s. 10d., there remains for labour and profit 100 per cent. thus the retailer clears 36l. 13s. 6d. by every cow. On the whole, they are flated to divide amongst them the unreasonably large sum of 308,833l. 5, and the sum paid for milk amounts to 626,233l."

"When the families of fashion are in London for the winter season, it is supposed that the consumption, and consequently deterioration, of milk are at the highest. During the summer months, when such families are for the most part in the country, the milk may probably be of rather a better quality. The cream is taken from so much of it as remains insufficient, and made into fresh butter for the London markets. The butter-milk is given to the hogs."

"The milk is always given in its genuine state to the retail dealers; and, as it is sold to them by the cow-keepers after..."
COW-KEEPING.

after the rate of two-pence three-partings per quart, and is
tailed by them at four-pence halfpenny per quart, the proft
is purely so large as ought to prevent even the smallest
adulteration. But when it is considered how greatly it is
reduced by water, and impregnated with worse ingredients,
it is much to be lamented that no method has yet been de-
volved to put a stop to the many scandalous frauds and in-
formations in general practice, with regard to this very nec-
cessary article of human sufficiency. It is certainly an object
well deserving the particular confideration of the legislature.
It cannot be doubted that many persons would be glad to
make some addition to the price now paid for it, (high as
that price is) provided they could, for such increased price,
procure so useful an article in domestic economy perfectly
"genuine."

But besides this, it has been flated in the fame report
that "it is a common practice with the retailers of this use-
ful article to carry the milk first home to their own houses,
when it is set up for half a day, when the cream is taken
from it, at least all that comes up in that time, and it is
then fold for new milk; by which means, what is delivered
in the morning is no other than the milk of the preceding
afternoon, deprived of the cream it throws up by flanding
during that time. By this means, a further considerable
profit accrues to the retailer, and the milk is rendered less
nutritions. It is suggested as a matter of surprize, that in
the city of London, fo long and defervedly famous for the
attention and vigilance of its magistrates, in the conduct and
regulation of the markets, no notice has lighthouse been taken
of, or any means adopted to prevent, the abuses so generally
and justly complained of in an article, the confumption of
which, in London and its environs, is greater than in half
the cities of Europe. Milk, says the able writer, has al-
ways been a favourite part of the food of Britons; and in a
great and populous city, it is highly conducive to the health
of its inhabitants. "Laite et carne vivant," says Cesar in
his Commentaries.

The fame writer adds, in regard to the management of
the cows, that "five or six men only are employed in at-
tending near three hundred cows;" and that "as one wo-
man cannot milk more than eight or nine cows twice a day,
that part of the bovines would necessarily be attended with
considerable expense to the cow-keepers, were it not that
the retailer, as before observed, agrees for the produce of a
certain number of cows, and takes the labour and expense
of milking on himself." In this practice too, with the
London cow-keepers it is observed that "every cow-house
is provided with a milk-room, (where the milk is mea-
lured, and served out by the cow-keepers,) and this room is
mostly furnished with a pump, to which the retail-dealers
apply in rotation, not secretly, but openly before any per-
son that may be standing by, from which they pump water
into the milk-vessels at their discretion. The pump is
placed there, it is said, expressly for that purpose, and in-
deed is very seldom used for any other. A considerable
"cow-keeper in Surrey has a pump of this kind, which, the
writer says, goes by the name of the famous black cow,
(from the circumstance of it being painted black) and is
said to yield more than all the rest put together. Where
such a pump is not provided for them, things are much
worse; for in that case the retailers are not even careful to
use clean water. Some of them have been seen to dip their
pails in a common hore-stough; and, what is still more
disgraceful, though equally true, one cow-house happens to
stand close to the edge of a stream, into which runs much
of the dung, and most of the urine, of the cows; and even
in this stream, so fully impregnated, they have been ob-
fected to dip their milk-pails.

"A cow-keeper informs the author, he says, that the
retail milk-dealers are, for the most part, the refuse of other
employments; professing neither character, decency of man-
ners, nor cleanliness. No person could possibly drink of the
milk, were they fully acquainted with the filthy manner of
these dealers in it. The same person, he also observes,
fuggetts, as a remedy for these abuses, that it would
be highly proper for every retail milk-dealer to be obliged
to take out an annual licence from the magistrates, which li-
cence should be granted only to such as could produce a
certificate of good conduct, signed by the cow-keeper, and
a certain number of their customers; and also on their being
sworn to sell the milk pure and unadulterated."

It is observed by the writer of a work entitled "Synopsis
of Husbandry," that "of the several different ways of rais-
ing a profit from milk-cows, that of selling the milk, where
circumstances will allow of its being carried on to a due ex-
tent, is by far the most eligible. In the economy of making
butter and cheese, the trouble and expence are daily and
perpetual. Several extraordinary domestics must be employed,
where the dairy is large; and no small allowance of fuel is
necessary, that boiling water may be still at hand, to field
the pails and other utensils employed on the occasion.
That "in suckling, also, the charges are much heavier than
when the milk is sold out of the pail; for sucklers are con-
tinually wanted, which are often bought in at a very advanced
prices; and sometimes these are not to be procured at any
rate, just when they may be required; and that either the
calves, which are ready for the butcher, must be kept a
week or two longer than would otherwise have been need-
nary, in which the farmer will rarely find his account; or,
if these calves are sold off, there will be an overplus of milk,
of which it will be found diffcil to make any profit, since
it will not produce a quantity of cream sufficient to make
any advantage by the butter. Now the milk-man, it is re-
marked, has none of these inconveniences to struggle with;
and, whilst the cows continue to yield an ample produce,
and this goes off at a quick rate, the whole of the busines
is pursued with little trouble; and, what is an additional
advantage, each cow yields a profit before her milk is sent
to market, by the sale of its young calf; whereas the suck-
lings farmer, as was mentioned before, is often under the
necessity of purchasing fuel young calves to keep up his flock:
"a balance greatly in favour of those persons who make sale
of their milk."

And it is further observed, that "on farms where there
are many cows maintained, either for the profit of the milk,
or the fatt'd calf, it will be often necessary, on a variety of
accounts, to buy in fresh flock, either to supply the place
of those which are rendered unfit for these purposes by age
or accident, or to furnish an additional demand for milk,
&c. In order, therefore, that the utmost emulation may be
reaped from his profession, it will be convenient that the
farmer do not embark further in the busineses than he can
carry on to the greatest possible advantage; so that when-
ever a cow is to be turned off, and another bought in to
supply her place, a patience may be in readiness to receive the
former, where the may remain to fatten, or to recover from
disease, as the case may be; whereas, if the farm be fully
flocked with milk-cows, those which are turned off must
immediately be driven to market, and sold at a low price,
to make room for their successors, which in all probability
were bought in at a dear rate." See Dairying, and
Cow.
This system of farming is one which, from the many conveniences and little trouble or risk which attends it, should never be left light of by those farmers who are situated contiguous to large towns, or villages, or even on the banks of canals at some distance, by which the produce can be readily and cheaply conveyed to them. And it is the more necessary to be regarded, in consequence of the increasing demand for the produce, and its vast utility in the rearing of the children of the rich, as well as those of the labouring poor.

Cow-Leaf, in Agriculture, is a term applied to such grounds, whether meadows or pastures, as are preferred for the purpose of being depastured with cows.

Cow-Milk, in Rural Economy, is a provincial term often applied to the drainage of cow-fields, dunghills, and cow-slitts.

Cow's Mouth, in Geography, a cavern so called by the Hindoos, near 300 miles above the place where the Ganges enters Hindoostan. According to Mr. Daniel's sketch, to which major Rennell refers, this is above the Upper Gangoutra, which is about 150 geographical miles from Sirnagur. See GANGES.

Cow-Pafr, in Rural Economy, is a word sometimes provincially made use of to signify a cow-yard, fold-yard, or straw-yard, where cows are turned in for the purpose of eating the straw.

Cow-Parsley, in Botany. See Chelamphyllum.

Cow-Parsley, in Rural Economy, a name frequently applied to a plant (Chelamphyllum phaenopterygium) which is common in pasture grounds, and which is liable to indicate a fruitful soil. Cows are said to be fond of it even to such a degree, according to Mr. Wainwright, that about Dudley, when the pastures are over-run with it, as frequently happens, they are constantly turned in to eat it up. Rabbits relish it; but neither horses, sheep, nor swine, choose it. From its being one of the most early plants in rising in the spring, it might perhaps be converted to use as an early green food. In the beginning of April it has often the height of two feet, or more. It should be eradicated from all pasture grounds, as injurious to the natural grass, and as spreading itself rapidly by seeds. The roots, from being perennial, are often very troublesome, and difficult to be destroyed.

Cow-Parseth, in Botany. See Heracleum phaenopterygium.

Cow-Parseth, in Rural Economy, the name of a plant (Heracleum phaenopterygium) which is very troublesome as a weed in some grounds, and which rises to the height of nearly three feet. Rabbits, hogs, and swine, eat the leaves with eagerness; and it is likewise eaten by cows, goats, and sheep; but horses refuse it, or eat it indifferently. It is known by various names, as wild parseth, meadow parseth, madnep, hogweed, &c. It is a plant which contains a large proportion of fæcal matter in its constitution.

Cow-Quakes, in Botany. See Briza.

Cow-Quakes, in Rural Economy, the name often given to a plant of the grass kind (Briza media), which is frequent in fields and pastures of the more wet kind. It is eaten by cows, goats, and sheep. The land should be well drained to get quit of it.

Cow-Rake. See Cowl-Rake.

Cow, Sea, in Zoology. See Sea-Cow.

Cow-Tie, in Rural Economy, the name often provincially made use of to signify the short thick hair-rope, which has a wooden nut at one end of it, and an eye at the other, that is employed by the milker to hoppole the hind-legs of the cow during the time of milking, and keep her quiet and secure from kicking and overturning the pail.
COW

has a town-clerk, &c. &c. The market day is Tuesday, and there are three annual fairs.

COW and CALF Paddre Rivers, are head branches of Reverance river, in Virginia.

COW and CALF Rocks. These are the names of some rugged rocks projecting out of the sea off Tremore Head, near Padifow in Cornwall. The highest of these rocks had its situation determined in the government trigonometrical survey in 1795, by an observation from St. Agnes Beacon, distant 94,650 feet, and bearing 28° 7' 22" S.W. from the parallel to the meridian of St. Agnes; and another from Karumnun, distant 169,450 feet: whence is deduced its latitude 50° 31' 47.7" N., and its longitude 5° 24' 25", or 25° 9' 5 W. of Greenwich.

COWDEN, a rectorcy in Kent, in the 1st of Sutton. The situation of its fleecle was settled in the government trigonometrical survey in 1799, by an observation from Frant fleecle, distant 41,943 feet, and bearing 67° 18' 3'° S.E. from the parallel to the meridian of Greenwich; and another from Bidborough station, distant 20,485 feet, bearing 72° 17' 27" N.E. from the same parallel: whence is deduced its latitude 51° 5' 34.2" N. and longitude 0° 6' 59.9 E. of Greenwich.

COWE, the capital town of the Cherokee Indians, situated at the foot of the hill, on both sides of the river Tenneffee. At this place terminates the great vale of Cowé, exhibiting one of the most charming mountainous landscapes that can be seen. This vale is closed at Cowé by a ridge of high hills, called the "Jore mountains." The town contains about 100 habitations. In the confluence of the lake of Tenneffee, Cowé is described as near the line which separates Tenneffee from Virginia, and is divided into Old Chota, another Indian town, by that part of the great Iron or Smoky mountain, called Unicoi or Unaca mountain.

COWEN, a river of Wales, which runs into the Tawe, in the county of Carmarth.
Royal Society. On the death of Cromwell he went again to France, and became a second time an agent in the royal cause; and when Charles II. was restored to the throne of those realms, he returned and was in hopes of some signal reward for his many services: but after a considerable lapse of time, during which he made many fruitless applications, he obtained what was equal to about 300l. per annum. He had already, from a desire of retirement, taken his abode at Barn-elm's on the banks of the Thames, and seems to have had enough of the world to desire never to engage again in its vexations and changes. From Barn-elm's he removed to Chertsey, where he lived but a short time; but long enough to find that neither his body nor mind were properly adapted to this new scene. He died at the Postchaise in Chertsey, in the year 1667, in the 49th year of his age. He was buried near Chaucer and Spencer in Westminster Abbey, with great pomp; and the king himself became his eulogist, by saying that "Cowley had not left a better man behind him in England." By Dr. Spratt he is represented as the most amiable of mankind, to which no one object. He was of a free and independent spirit, modest, sober, and sincere; of gentle affections, and moderate wishes; neither making a parade of his own merits, nor undervaluing those of others.

For a complete account of Cowley as a poet, and of his various pieces, we refer to Johnson's Lives of the Poets; where, among other things, we are told, "that Cowley brought to his poetic labours a mind replete with learning; and that his pages are embellished with all the ornaments which books could supply; that he was the first who imparted to English numbers the enthusiasm of the greater ode, and the gaiety of the sylph; that he was equally qualified for sprightly fallies and for lofty flights; that he was among those who freed translation from servility, and, instead of following his author at a distance, walked by his side; and that, if he left verification yet improveable, he left likewise, from time to time, such speciments of excellence as enabled succeeding poets to improve it." Bisg, Brit. Johnson's Lives of the Poets.

Cowper, a rectory in Middlesex, in the hundred of Elthorn, is situated near to the Colne river, at the point where that river, owing to the strata dipping farther than its bed, obtains the top of the London-bay stratum, and where the Grand Junction Canal leaves the vale of Colne, and changes its course towards the canal, upon the top of the clay stratum. The first lock which occurs in proceeding along the canal from Paddington is in this parish, called Cowley Lock.

Cowpen, in the parish of Horton in Northumberland, is one of those works which contribute to the supply of the London market; called Cowper, by an error of the press, (see Coal;) and is situated on the south side of the Blyth river, to which it has a railway laid, for the conveyance of large waggons laden with coals to the shipping flats on the river. Cowpen main coals obtain a better price than many other sorts, on account of their quality of burning freely.

Cowper, William, in Biography, a very distinguished modern poet, descended from an ancient and highly respectable family, who can trace their ancestry as far back as the reign of Edward IV., was born at Berkhamsted in Hertfordshire, November 26, 1731. His father, Dr. John Cowper, was rector of the parish, and nephew to lord chancellor Cowper. The infancy of Cowper was extremely delicate; and his constitution at that early period discovered a tendency to difficulties, to melancholy, and despair, which darkened, as he advanced in years, into periodical fits of the most deplorable depression. In quitting the house of his parents, he was sent to a reputable school at Hertford, under the care of Dr. Pitman. From hence he was removed in consequence of some complaint in his eyes, to which he himself alluded in a letter to Mr. Hayle, his biographer. "I have been," says he, "subject to inflammations of the eyes; and in my boyish days had specks on both, that threatened to cover them. My father, alarmed for the consequences, sent me to a female oculist of great renown at that time, in whose house I abode two years, but to no good purpose. From her I was sent to Westminster school, where, at the age of fourteen, the small-pox feigned me, and proved the better oculist of the two, for it delivered me from them all; not, however, from great labours of infraction, to which I am in a degree still subject." At Westminster he acquired the classical knowledge and correctness of taste for which he is celebrated; yet he was often heard to deplore the perfection he sustained, both here and at Hertford, from the cruelty of his school-fellows, not daring, to use his own expression, to raise his eye above the shoe-buckle of the elder boys, who were apt to tyrannize over his gentle spirit. The scuteneus of his feelings, in his childhood, rendered those important years, which might have produced under tender culture at the age of lively movements, miserable years of increasing timidity and deprecation, which, in the most cheerful hours of advanced life, he could hardly describe to an intimate friend without shuddering at the recollection of his early wretchedness. At the age of eighteen he exchanged a public school for an attorney's office. He resided three years in the house of a Mr. Chapman, to whom he was engaged by articles for that time. After this period he settled himself in chambers of the Inner Temple, where he resided till he was 33 years of age. Even here his native diffidence confined him to social and subordinate exertions: he wrote and printed, but it was as the concealed author of letters of the common sort. He had, however, an opportunity, which he embraced, of cultivating the friendship of some eminent literary characters, who had been his school-fellows at Westminster, particularly Colman, Donnel Thornton, and Lloyd, who are referred to in the course of our work. See Churchill, &c. Of himself Cowper says in a letter to Mr. Park: "From the age of 20 to 33 I was occupied, or ought to have been, in the study of the law; from 33 to 60 I have spent my time in the country, where my reading has been only an apology for idleness; and where, when I had not either a magazine or a review, I was sometimes a carpenter, at others, a bird-cage maker, or a gardener, or a drawer of landscapes. At 50 years of age I commenced an author: it is a whim that has served me longest and best, and will probably be my last." Lightly as this model poet has spoken of his own exertions, and late as he appeared to himself in producing his chief poetical works, he had received from nature a contemplative spirit perpetually acquiring a store of mental treasure, which he at last unveiled to delight and adorn the world. He began, however, his poetical career at the age of 14, by translating an elegy of Tibullus; and there seems to be no room to doubt that in his early life he wrote many poems of great merit, which are probably for ever lost to the world. In his 31st year he was nominated to the office of reading clerk and clerk of the private committees in the house of lords: but the peculiarities of his mind rendered him unable to support the ordinary duties of his new office; for the idea of reading in public proved a source of torture to him. An expedient was devised: he resigned his situation of reading clerk, and was appointed clerk of the 11h journals.
COWPER.

Journals in the same house. This change, it was hoped, would render it unnecessary for him to make a personal appearance in parliament. Certain unexpected business, however, called upon him to appear at the bar of the house of lords. His terror on this occasion overpowered his reason. Though he had prepared himself for his public duty, he was sure, that all his knowledge, acquired with much assiduity and toil, would for the bar of the house.

The distressing apprehension increased to such a degree, that he was not only unable to make the experiment, but the very friends, who called on him for the purpose of attending him to the house, acquiesced in the cruel necessity of his relinquishing the prospect of a situation to which, it was now evident, he was unequal. The conflict between the wishes of his ambition, and the terrors of difference, completely overwhelmed his health and his mental faculties, that it was found necessary to remove him to St. Albans, where he resided a considerable time, under the care of Dr. Cotton, an eminent physician, the author of some well-known poems.

"The misfortune of mental derangement," says Mr. Hayley, "is a topic of such awful delicacy, that I consider it as the duty of a biographer rather to sink in tender silence, than to proclaim, with circumstantial and offensive terymetry, the minute particulars of a calamity to which all human beings are exposed, and, perhaps, in proportion as they have received from nature those delightful but dangerous gifts, a heart of exquisite tenderness and a mind of creative energy." From December 1763 to the following July, the mind of Cowper appears to have laboured under the severe sufferings of morbid depression. At length, by the medical skill of Dr. Cotton, the indescribable load of religious dependancy, which had borne down the admirable faculties of this worthy man, was removed. His ideas of religion were changed from the gloom and terror of despair to the lustre of comfort and delight; and in the spring of 1763 he removed to a private lodging at Huntington, where he was soon introduced to the family of Mr. Unwin, who afforded him every consolation and aid that his circumstances required. It is not possible, in a work of this kind, to follow our poet through all his scenes of retirement. On the death of Mr. Unwin, he removed with his widow to Olney in Buckinghamshire. This happened in October, 1767, which was therenceth the principal residence of Mr. Cowper. His retirement was enabled by many private acts of beneficence; and his exemplary virtue was such, that the opulent sometimes delighted to make him their almoner. In his favoured life at Olney, he administered abundantly to the wants of the poor, from a fund with which he was supplied by the late John Thornton, esq. Before he quitted St. Albans, he even took upon himself the charge of a necessary child, in order to extricate him from the perils of being educated by very profligate parents: he put him to school at Huntington, removed him on his own removal to Olney, and finally settled him as an apprentice at Oundle in Northamptonshire.

At Olney he contracted a close friendship with the late reverend Mr. Newton, then minister there, and who for many years past, till within a few weeks, was the rector and very popular preacher at St. Mary Woolnoth, Lombard-Street, London, whose religious opinions were in unison with his own. To a collection of hymns published by Mr. Newton, Mr. Cowper contributed a large number of his own compositions. To the public he first became known as a poet by the publication of a volume in 1782. If the pieces of which it consisted, and which were written in rhymed heroic, did not at once place the author high in the scale of poetic excellence, they sufficiently established his claim to originality, and gave tokens of a genius rather kept down by his subject than deficient in native powers. The style is rather strong and forcible than poetical: though often proof at, this time he frequentlyodiad,...
was buried in St. Edmund's chapel, in Derham church, where a tablet is raised to his memory by his affectionate friend and relation, lady Helckth.

The perfou and mind of Cowper seem to have been formed with equal kindness by nature; and it may be questioned, if the ever bowed on any man, with a forder prodigiosity, all the requisites to conciliate affection and to inspire respect. He was beloved and revered by all who knew him, with a sort of idolatry. "I may," says Mr. Hayley, "be suspected of speaking with fond partiality the unperceived exaggerations of friendship; but the fear of such a censure shall not deter me from bearing my most deliberate testimony to the excellence of him whose memory I revere, and fav- ing, that as a man he made, of all men whom I have ever had opportunities to observe so minutely, the nearest approaches to moral perfection. Indeed a much more experienced judge of mankind, and Cowper's associate in early life, lord Thurlow, has expressed the same idea of his character; for being once requested to defcribe him, he replied, with that folksm air of dignified eloquence, by which he was accustomed to give a very forcible effect to a few simple words, "Cowper was a truly a good man." Hayley's Life and Polkhumous Writings of William Cowper, ed. Gen. Biog.

Cowper, William, a celebrated surgeon and anatomist of London, was born about the middle of the seventeenth century, but in what year, or in what place, is not known. Of his first work, "Myotomia Reformata, or a new administration of all the Muscles of the Human Body," which was published in London in 1694, in 8vo. Haller says, "Although it may not be compared with the later works of Albinus on the subject, yet it far excels all that had preceded it, in rectness, and as containing delineations and descriptions of several muscles that had not been before observed." A splendid edition of this work was published by Dr. Mead in 1724, in folio, several years after the death of the author, with an introductory discourse on muscular motion, and some but not very important additions. More attention, on the whole, appears to have been paid to the elegance, than to the correctness of the figures, in this edition. In 1697, the author published, at Oxford, in folio, "The Anatomy of Human Bodies." The greater part of the plates, with which this magnificent work is illustrated, was purchased by some London bookfellers, in Holland, and belonged to Bidloo's anatomy. Our author added 40 figures, from drawings made by himself. He also very much improved, and corrected the descriptions of the figures, given by Bidloo, and added some ingenious and useful anatomical and chirographical observations. Bidloo, and with reason, complained of the plagiarifre. Cowper answered his complaints, in a publica- tion, called "Euchariftia," in which he gives a description of some glands, seated near the neck of the bladder, which have obtained the name of Cowper's mucous glands. He pretended to believe that the plates belonged to a work, projected by Swammerdam, but this excuse, for which there was no foundation, gained little credit. Two later editions of this work, which is still in great request, have been published, the one at Leyden, in 1737, the other at Utrecht in 1750.

Cowper was also author of several communications to the Royal Society, on the subjess of anatomy and surgery, which are printed in their Transactions, and of some observations inferred in the Anthropologia of Drake. He died in the year 1710. Haller Bib. Anat. General Biog.

Cowper's Glands, in Anatomy, are two gladdular bodies, varying in size, and situated at the bulb of the urethra.

Cow-Pox, or Cow-Pocks, in Medicine, the popular name of a disease, which, till lately, was never described by medical writers.

§ 1. Its Description and Origin.

This disease, in the brute animal, is commonly called the cow-pox; in the human subject the cow-pock. It appears on the teats of cows, in the form of irregular pustules, surrounded with inflammation. The colour of the pustules is a paltry blue, approaching to livid. The animals become indisposed; and the secretion of milk is much leaffed. Solutions of ceruzta acuta, vitriolum zinca, vitriolum cuprum, and other astringents, are a speedy remedy for the pustules; otherwise they degenerate into troublesome and obblinate ulcerations.

Similar effects are produced on the hands of the milkers; attended with febile symptoms, and tumours in the arms. The disorder is also sometimes communicated to other parts of the body by the nose of the patient, or some other cause.

It is the popular opinion in the county of Gloucester, and some other countries, that the cow-pox derives its origin from the heel of a horse; and that men who are employed in driving horses, and also in milking, from want of cleanliness, transfer the virus from the horse to the cow. Dr. Jenner, however, is of opinion, that it is the thin fluid, of a darkish colour, oozing from a recent crack in the heel, and not the thick matter of grease, which poofizes the property of exciting this disease; and that there is no other source to which the genuine cow-pox can be traced.

Many instances of this disorder, in the human subject, together with the most authentic and satisfactory evidence of its originating from the horse, may be found in Dr. Jenner's "Inquiry into the Causes and Effects of the Variolae Vaccinae," published in 1798, in the London Medical Review, the Medical and Physical Journal, and in Ring's "Treatise on the Cow-pox," of which the first volume was published in 1801, the second in 1803.

It appears by the writings of Dr. Jenner, that farriers are frequently susceptible of the small-pox, in consequence of their having been infected with this disease from the horse. It is, however, not always confined to the heel of the animal. Dr. Jenner relates a case, in which a matter from the shoulder, and Dr. La Font of Salonicca one, in which matter from the leg produced the genuine affection.

One strong argument, that it never proceeds from any other origin than the horse, is, that it has never been observed in Cheshire; where it is not cullomary for men, who have the care of horses, to be employed in milking.

Matter taken from the horse by Dr. Ley of Whitby, proved equally efficacious with that from the cow, both in the inoculation of the cow, and of the human subject. Dr. Sacco of Milan also made the same experiments with the same success. A portion of the same virus was transmitted by him to Dr. de Carro of Vienna, and by Dr. de Carro to Dr. Frie of Sileia; both of whom used it indifferently with vaccine matter, and find it produces a similar effect.

Some people suppose, that the cow-pox derives its origin from the small-pox; and that the infection is communicated to the cow by the hand of the milkers; but this hypothesis is neither warranted by reason, nor confirmed by fact. There is no analogy to render it probable, that any poison is thus mitigated by transmission through the brute animal. The experiment has often been tried in many parts of the world. A local pustule has sometimes been excited; but the matter which it yielded has not succeeded in subsequent inoculations.

Were the cow-pox thus communicated to the cows, it would
would be as common in Cheshire as in Gloucestershire, as common in Scotland or France as in England, and as common in Asia or America as in Europe. As an additional proof that it is not thus produced, it will be sufficient to relate the information received from Mr. Dal ton, a surgeon at Madras. After observing, that he had not been able to procure genuine matter in India, in order to make experiments, or even to learn that horses in India are subject to the small-pox, he gives the result of repeated experiments which he made in the government gardens at Madras, by order of the governor, Earl Powis, and in his presence.

To render these experiments as complete and satisfactory as possible, several milk-cows were selected; and some of them were inoculated by Mr. Dalton, in their teats and udders, with the small-pox very minute; while the teats of others were rubbed with it for a considerable time, till they became highly inflamed. No pustule was excited in any one of them; but ulcerations appeared on those teats, into which matter had been rubbed, the third day after the operation. Several young children were inoculated with the small-pox, and their arms inflamed andellered. They had also a feverish degree of fever, which gave Mr. Dalton hopes that his experiment had succeeded, and that he had generated a mild species of small-pox which, by putting them to the test of various inoculations, they all had the smallpox in the most indubitable manner, and regularly went through the disease. Mr. Dalton concludes with remarking, that all these circumstances will bear the strictest scrutiny; as they are well known to several medical practitioners at Madras.

§ 2. On the Discovery and Early Practice of Vaccination.

It has been justly observed, that, for the discovery of this excellent art, we are indebted, under providence, to a fortunate concurrence of circumstances; first, to the talents of Dr. Jenner, secondly, to his education under the celebrated Hunter, and thirdly, to his situation in the vale of Gloucester. His inquiry into the nature of the small-pox commenced about the year 1775. His attention to this subject was first excited by observing, that among those whom he inoculated for the small-pox, many were insensible of that disorder. These persons, he found, had undergone the casual cow-pox, which had been known in the dairies from time immemorial; and a vague opinion had prevailed, that it was a preventive of the small-pox.

He met with many apparent exceptions to this rule; which led him to ask the opinions of other medical practitioners in the neighbourhood, who all agreed, that the prophylactic power of the cow-pox was not to be relied on. This for a while damped, but did not extinguish his ardour; for he had the satisfaction to learn, that the cow was subject to various eruptions, called by that name, all of which were capable of infecting the hands of the milkers. Having surmounted this obstacle, he formed a distinction between the different kinds of pustular eruptions, to which the cow is liable; denoting one species the true, and all the others the spurious cow-pox.

This impediment to his progress was not long removed, before another, of far greater magnitude in appearance, started up. Infusions were not wanting to prove, that when the genuine cow-pox broke out in a dairy, some persons who had experienced the disease resisted the small-pox, and others continued insensible of that distemper. This obstacle, as well as the former, gave a painful check to his fond aspiring hopes; but reflecting that the operations of nature are for the most part uniform, and that when two persons have had the cow-pox, it is not probable one should be perfectly free from the small-pox, and the constitution of the other remain unprotected, he resumed his labours with redoubled ardour.

The result was fortunate; for he now discovered that vaccine, as well as variolous matter, undergoes a change, and that when it has lost its specific property, it is still capable of producing a putridous eruption. Hence, a person who milks a cow one day, may receive the infection of the genuine cow-pox, and he rendered for ever secure from the infection of the small-pox; while another, who milks the same cow the next day, may have a putridous eruption, and perhaps a constitutional indisposition to a considerable extent, yet still remain insensible of the smallpox.

While thus investigating the nature of the cow-pox, he was struck with the idea, that it might be practicable to propagate the disease by inoculation, after the manner of the small-pox; first, from the cow, and then from one human subject to another. The first case in which he put his theory to the test inspired him with confidence; and a regular series of experiments, which he afterwards instituted for that purpose, was crowned with success. Several persons were successively inoculated from each other with vaccine matter, and afterwards exposed, in a variety of ways, to the infection of the small-pox, which they all resisted.

This happy discovery was communicated to the world by Dr. Jenner, in a treatise published in June 1798, entitled, "An Inquiry into the Causes and Effects of the Variolous Vaccine Disease, discovered in some of the Western Counties of England, particularly Gloucestershire, and known by the name of the Cow-pox." The result of his further experience was also brought forward in subsequent publications, in the course of the two succeeding years; and the whole work has been since republished in one volume. He has also written a small tract, entitled, "The Origin of Vaccine Inoculation," from which the preceding account of this most singular improvement of the healing art, is, in a great measure, extracted.

It has been justly remarked, that the same fortune which has attended all other great discoveries, and all other great benefactors of mankind, attended Dr. Jenner on this occasion. Envy assailed his fame; his discovery was first deprecated, then denied; and as he surpassed Harvey himself in glory, so he also surpassed him in the opposition which he had to encounter. Truth, however, ultimately prevailed. Vaccination obtained a complete triumph; and the foes of Jenner and humanity were covered with confusion.

In July 1798, Mr. Cline inoculated a child with vaccine virus, received from Dr. Jenner; which succeeded. He afterwards put the child to the test of inoculation with small-pox matter in three places; which he refuted. On this occasion, Mr. Cline informs Dr. Jenner, that Dr. Lister, formerly physician of the Small-pox Hospital, and himself, are convinced of the efficacy of the cow-pox; and that the subjection of this mild distemper for the small-pox, promises to be one of the greatest improvements ever made in medicine. He adds, the more I think on the subject, the more I am impressed with its importance. This influence of the first introduction of vaccine inoculation into the metropolis, it was necessary to mention; because another medical practitioner has laid claim to that honour. Attempts were made by Mr. Cline to continue the practice, by vaccinating other subjects with the virus thus produced; but they proved abortive; probably from the matter not being taken at an early period of the disease.

In November 1798, Dr. Pearson published his "Inquiry concerning the History of the Cow-pox, principally with a view
view to supercede and extinguish the Small-pox." In this work he brings forward the result of an extensive correspondence with medical practitioners, and others, in different parts of the kingdom; tending to confirm Dr. Jenner's opinion, that the cow-pox is a preventive of the small-pox. He had been informed of this discovery of Dr. Jenner by Mr. Hunter, nine years before; and had constantly mentioned the circumstance, in every course of his lectures, from that time. The fact had been mentioned in three publications: by Dr. Adams, in his "Treatise on Mixed Poisons," in 1765, and by Dr. Woodville, in his "History of Inoculation," in 1765; having been communicated to them by Mr. Cline, and to him by Dr. Jenner. It had also been mentioned by Dr. Beddoes, in 1755, in his " Queries concerning Inoculation," in a letter from Mr. Rolph, who was acquainted with Dr. Jenner.

Information concerning the prophylactic property of the cow-pox had been given to Sir George Baker, many years before, by his relation, the Rev. Herman Drew, of Abbots, in Dorsetshire, and several medical practitioners; but not gaining credit, it was never published. The same circumstance had also been noticed in a weekly paper, called "General Amusements," published at Gottenburg in 1766. The author, whose name was not announced, speaking of the diseases said by Livy to be common to men and cattle, observes that the cow-pox prevails in the neighbourhood of Gottenburg, and infects the milkers; and that those who have had the cow-pox, flatter themselves they are perfectly secure against the infection of the small-pox. He also tells us, he had made many inquiries, and was well assured by very respectable persons, that this opinion of the milkers was well-founded.

But the most ancient reference to the prophylactic power of this disorder on record, is probably that in "Ring's Treatise on the Cow-pox," p. 107. It is as follows: "Being desirous of knowing, whether there was any allusion to this disease in any ancient author, I wrote to Dr. Jenner on that subject; who favoured me with the following answer:" I know of no direct allusion to the disease, in any ancient author; yet the following seems not very difantly to bear upon it. When the duchesses of Cleveland was taunted by some of her companions, that she might foon have to deplore the loss of that beauty which was then her boast, the small-pox at that time raging in London, she replied, that she had no fears about the matter; for she had had a disorder, which would prevent her from ever breathing the small-pox. This was lately communicated to me by a gentleman in this county; but unfortunately he could not recollect from what author he derived his intelligence.

In the Medical Journal for March 1799, it is stated, that the cow-pox had broken out at some farms in the environs of London, about the latter end of December; and that matter had been taken for inoculation. This alludes to the commencement of the practice of vaccination by Dr. Woodville.

In the same work for the ensuing month, it is a letter from Dr. Pearson, dated March 12th, in which he states, that upwards of a hundred and sixty persons had been inoculated by Dr. Woodville and himself, separately; and that none of the patients had been confidered to be dangerous ill. He also observes, that so many cases of the fever kind did not occur in this practice, as usually occur in the same number of cases of the inoculated small-pox; but he nevertheless acknowledges, that although many of those patients were less indisposed, yet the whole amount of their constitutional illness seemed to be as great, as in the same number of patients in the inoculated small-pox." He also states, that "in many of the cases, eruptions on the body appeared; some of which could not be distinguished from the small-pox."

The next article in the same publication is a letter from Mr. Lawrence, a veterinary surgeon; in which he advices us not to be too fanguine in our hopes respecting this discovery; and expresses an opinion that the cow-pox will prove only a temporary preventive of the small-pox. Hence it is evident, that he has a right to dispute the palm of priority with Dr. Mofley, who confessedly advanced the fame opinion before he knew any thing of the cow-pox; and with Mr. Birch, who, as well as Dr. Mofley, boasts that he was, for a long time, the only opponent of the practice. Be this as it may, Mr. Lawrence observes, that "some of Dr. Pearfon's accounts make the cow-pox a more severe disease than the inoculated small-pox;" and that "if these accounts are to be depended on, the cow-pox has already had its day."

In one respect Mr. Lawrence has proved himself a much better prophet than either of the other gentlemen in question. He says, "whatever may be the fate of cow-pox inoculation, it has given, and will give occasion to a pretty large and open discussion; which is always beneficial, as having a tendency to promote discovery, and promote improvement; and when the public ardour for the present topic shall have become a little cool and satisfied, I hope it will be turned by enlightened men towards another, perhaps of nearly as great consequence, namely, the prevention of the original malady in the animals themselves. Those who have witnesses, or only reflected on, the excessive filth and naifae, which most unavoidably mix with the milk in an infected dairy of cows, and the corrupt infalubrious state of their produce or consequence, will surely join me in that sentiment." How well this hope has been realized, and this prediction fulfilled, is evident from Dr. Jenner's account, that the cow-pox is already become so rare in Gloucestershire, where it used to be so frequent; and from its never having reappeared in the neighbourhood of London, since the farmers there have known its origin, now a period of nine years. This is no small proof of the rectitude of Dr. Jenner's opinion, that it originates from the great.

In the same number of the Journal, is a communication from Dr. John Sims, containing the case of Mr. Jacobs of Drifol; who is there stated to have had the cow-pox twice, and yet to have had the small-pox afterwards in its severe manner, that his life was despaired of. This case has since been proved by Mr. Henry Jenner, and acknowledged by Dr. Sims to have been the famous cow-pox; and Dr. Sims, who published the account of it from the most honourable motives, is so perfectly convinced of it, that he is become one of the most zealous advocates of vaccination.

He tells us, that Mr. Jacobs described the cow-pox which he had as the most loathsome of diseases; and observes, that Dr. Jenner had entirely overlooked this circumstance, although in itself so formidable an objection to the practice, even if it should be found to answer the purpose for which it was introduced. He also remarks, that it was impossible to know how far such a disorder might prove injurious to others, as well as to the individual who submitted to inoculation.

All these unfavourable accounts of the new species of inoculation deterred many of medical practitioners from adopting it. But perhaps no author founded a louder alarm on this occasion than Dr. Mofley. This gentleman boasts of his having been the first who warned parents against vaccination; and he seems determined to profit in his
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his opposition, in spite of any evidence that can possibly be advanced in its favour. Among the number of those who published adverse evidence, was also the celebrated Dr. Beddoes; the reprehensibility of whose name added considerable weight to that side of the question. As a proof, however, that this gentleman was influenced in his conduct only by the most pure and upright motives, he has since voluntarily come forward as a zealous advocate of the practice, and pronounced the mock flattering panegyric on Dr. Jenner.

Not so Dr. Mofley; he is so far from being convinced of the utility of vaccination, that he seeks to be more and more exasperated against it, by every new account of its successes. This, however, is not any great wonder; when he confesses that he wrote against it before he knew what it was; when he pretends that inoculation has disarmed the small-pox of its terrors; that accidents in the inoculated small-pox are uncommon, and that under proper treatment, it leaves nothing behind injuries to the constitution. After this, we cannot be surprised at his endeavouring to terrify patients with the idea of bential humours; and of the ill consequences which may spring from that source, after a lapse of years.

A publication like this, although ill calculated to bear the test of criticism, was very well adapted to inflame prejudices into the minds of the vulgar and ignorant; who are at all times averse from innovation in the practice of physic; and not yet reconciled to the idea of engraving diseases.

But whatever effect this publication might produce on vulgar minds, it produced much less effect on the minds of medical practitioners, and of all other learned and scientific men than some of the first reports of those, into whose hands vaccination, on its second introduction into the metropolis, happened to fall.

In addition to what is already stated, Dr. Woodville's work on this subject appeared soon after; in the dedication of which he informs Sir Joseph Banks, that it does not afford the satisfactory evidence which he expected. It did not, indeed, afford the satisfactory evidence which others expected. Many people were of opinion, that in his account, he rather exaggerated the symptoms of those cases which had fallen under his care, in order to prevent vaccination from being established; as it tended to exterminate the small-pox, and to cut off the principal branch of his practice. This supposition was perhaps natural when it was considered, that the cow-pox was represented by Dr. Jenner as a mild disorder, and by Dr. Woodville as a violent one; and that it was consistent with his interest to represent it as such. The truth is, that the physician of the Small-pox Hospital was the last man in the world who should have made the experiment of inoculating for the cow-pox; and the Small-pox Hospital the last place in which it ought to have been made.

By perusing Dr. Woodville's publication, any one may discover, that when he commenced vaccination, he commenced it not only in the most improper place, but also without any competent knowledge of the nature of the disease. He did not know whether it was putrid, or cellular; general, or local; contagious, or not contagious. He also commenced without any precaution; for he confesses, that many of his patients were in apartments where they were compelled to breathe a various atmosphere; and he even added to this danger of infecting them with the small-pox, that of inoculating them for the disease, at almost every period, while they were under vaccination! The consequences were such as might well be apprehended. Many of them had the small-pox at the same time with the cow-pox. In a considerable number of cases, the cow-pox and small-pox matter were mixed together; in order to gratify curiosity, and see whether it was possible to create a new disease; but happily providence has set bounds to the power of duping mischief, and frustrate such attempts. In some instances one of those diseases is said to have prevailed, and in some the other; but in none of them was any hybrid disorder produced.

Dr. Woodville tells us he lent Dr. Jenner some of his cow-pox matter; which, at first, in some instances, occasioned a trifling eruption; probably the relics of the various matter, with which it had been contaminated by one of the circumstances already mentioned. He tells us, Dr. Jenner attributed the pulsatular eruption to some peculiar influence of the town air; but he informs us, that several of his patients, in whom these pustules appeared, were inoculated at the distance of eight miles from London; and that eighteen others, at a still greater distance, were inoculated with the same matter, in all of whom it produced a similar pulsatular eruption. Nevertheless, he was so far from believing this eruption to be the small-pox, that he strenuously labours to prove it was the cow-pox.

In one respect he is rather inconsistent with himself; for at page 135 he says, 'the cow-pox, in every case which we are acquainted with, has been introduced into the human constitution through the medium of external local inflammation; and is therefore to be considered as an inoculated disease. The virus of it seems also to affect a similar mode of action, and to be governed by the same laws as that of the small-pox.' But at page 132, after observing that the cow-pox is not infectious by effluvia, he says, 'this is certainly true, when the disorder is confined to the inoculated part; but where it produces numerous pustules upon the body, the exhalations which they send forth are capable of infecting others in the same manner as the small-pox. Two instances of casual infection in this way have lately fallen under my observation. In one the disease was severe, and the eruption confluent; in the other the disease was mild, and the pustules few.'

It must be allowed, that Dr. Woodville, in some instances, excited the cow-pox; since he has given a very accurate description of it. He says, 'If the inoculation be performed by a simple puncture, the consequent tumour, in the proportion of three times out of four, or more, assumes a form completely circular; and continues circumscribed, with its edges elevated and well defined, and its surface flat throughout every stage of the disease; while that which is produced from variolous matter either preserves a pustular form, or spreads along the skin, and becomes angulated and irregular, or disfigured with numerous vesicles.'

'Another distinction, still more general and decisive, is to be drawn from the contents of the cow-pox tumour; for the fluid which it forms, unleas from some accidental circumstance, very rarely becomes puriform; and the febora which succeeds is of a harder texture, exhibits a smoother surface, and differs in its colour from that which is formed by the concretion of pus.' So far Dr. Woodville pursues the description of the cow-pox; but suddenly he loses sight of that object, and again relapses into his former error, in the following words: 'All the appearances here described, however, do not constantly attend the disease; but are sometimes so much changed, that they can in no respect be distinguished, from those which arise from the inoculation of the small-pox. When the disease thus deviates from its usual appearance, at the inoculated part, its effects on the constitution have commonly, though not always, been felt...
more severely, than where the tumour was distinctly charac-
terized."

Dr. Woodville acquaints us, that since his table was
compounded, an infant at the break died on the eleventh day
after the cow-pox matter had been infected in its arm. In
this case, he tells us, the local tumour was very inconsider-
able; and the eruptive symptoms took place on the seventh
day; when the child was attacked with fits of the spasmodic
kind, which recurred at short intervals, with increased vio-
ience, and carried it off at the time above-mentioned, after
an eruption of eighty or a hundred pustules."

Thus, he tells us, it appears, that out of about five hun-
dred cases of the inoculated cow-pox, one proved fatal;
while in the various inoculation, at the Small-pox Hos-
pital, only one case proved fatal in six hundred. Many re-
spectable members of the medical profession were deterred
from vaccination by the foregoing statement; but it has
since been proved that the child died of the small-pox.

Dr. Woodville indeed acknowledges, that vaccination in
general produces much fewer pustules, and less indiffici-
tion, than the inoculation of the small-pox; but at the same
time he contends, that in several instances, the cow-pox has
proved a very severe disease; that in three or four cases out
of five hundred, the patient had been in considerable danger,
and that one child had actually died of the disorder. He
confesses, that if one out of five hundred cases of cow-pox
proved fatal, he should not be disposed to introduce the
disease into the Inoculation Hospital; but that he is inclin-
ed to think, that if the vaccine inoculation were
only taken from those in whom the disease appeared in a
mildest form, the refuit would be more favourable than in the
statement which he had given. He says, it had occasion-
ally happened, that matter taken from the arm of a patient,
in whom the disorder neither produces fever nor eruptions,
had in others produced both; yet it had much more com-
monly produced a mildest disease, than matter taken from
secondary pustules, or from a patient who had the disease
in a severe manner.

He tells us, that out of sixty-two of his patients who
were inoculated with the vaccine matter, fifty-seven had an
eruption; and that those who received the disease from an
any of these fifty-seven patients also had pustules in nearly
the same proportion. He also informs us, that the disorder which
proved fatal to one of his patients, was excited by matter of
this description; that is, by matter of the small-pox. So
far, however, was he from being aware of this, as to draw
from these cases the following inference; that the cow-pox,
from certain circumstances, is not only liable to lose the
characters which distinguish it from the small-pox, but also
to continue to propagate itself under this new and casual
modification. From these erroneous premises he, therefore,
draws a conclusion equally erroneous, that the small-pox
and the cow-pox ought to be considered only as varieties of
the same disease.

In the London Medical Review for August 1796, p. 626, Dr. Pear-
fson expresses an opinion, that the pustules resembling the small-pox, which occurred at that time in
vaccination, afforded matter, which, he believed, in some
cases, produced the cow-pox in its usual mild way. This
opinion, however, is not supported by any proof, and is
now perfectly exploded.

In the Medical Journal for the same month, Mr. Ring
published a defence of vaccination, in answer to Dr. Mo-
lley, in which he brings forward evidence to prove, that it
is much milder and safer than it had hitherto been repre-
sented to be by some London practitioners, and affirms that
the success of it had, on the whole, been such as to gratify
every reasonable expectation. He also cautions medical men
not to take matter for inoculation from any but an original
pustule; and not to make useless experiments, or wantonly
exploit the lives of their fellow-creatures to unnecessary dan-
ger, by inoculating them with one kind of matter, before
another had produced its final effect. This caution, unfor-
tunately, has been too often disregarded.

He also advanced an opinion, which he has since
fully confirmed in his treatise on the Cow-pox, that two
no-bid actions may take place in the body at the same time.
notwithstanding the contrary had been maintained by Mr.
John Hunter, and was considered in the schools of medicine
as an unquestionable doctrine.

About the same period, Dr. Jenner published the second
part of his work, entitled "Further Observations on the
Variola Vaccine;" in which he tells us, that soon after the
publication of the former part of his work, he clearly per-
cieved that his theory, which promised to be so beneficial
to mankind, was likely to fall into disrepute, owing to hasty
conclusions. He therefore requests medical practitioners to
be a little more careful in their observations, and the public
to suspend their judgment till they had more ample infor-
mation.

In the course of the following year, he republished these
two parts of his work, together with a third, in which he
says, he has the pleasure of seeing the feeble efforts of a few
individuals to depreciate the practice, sinking fast into con-
tempt.

He there observes, that upwards of six thousand persons
had then been vaccinated, and that the far greater part of
them had since been inoculated for the small-pox, and ex-
pelled to the infection of the disorder in every rational
way that could be devised, but to no purpose.

He then alludes to the experiments of Dr. Woodville,
the result of which, he observes, essentially differed from his
own in a point of much importance, three-fifths of Dr.
Woodville's patients having had eruptions resembling those
of the small-pox. These Dr. Jenner could not ascribe to
the infection of vaccine virus, when he considered, that in
his own neighbourhood, out of the great number of casual
and other cases which he had seen and heard of, although
the matter was derived from different fources, nothing like
a variolous pustule had ever appeared. He therefore ju
tly concluded, that those which had occurred in the practice
of Dr. Woodville, and of others to whom Dr. Woodville had
given matter, were occasioned by the variolous matter with
which he had inoculated his vaccine patients, on the third
or fifth day after vaccination.

In the Supplement to the Encyclopedia Britannica, un-
der the article Variola Vaccine, or Cow-pox, are some
erroneous, if not mischievous, opinions, which ought to be
corrected. Vaccination is there represented as a more fe-
vrous process than what Dr. Jenner gave us reasons to expect:
the operation exactly resembling the small-pox is stated to be
a very common occurrence; and in some cases the febrile
symptoms are said to be considerable and alarming. In one
instance it is asserted that the disorder proved fatal. It is
there also stated, on the authority of Dr. Woodville, that
the cow-pox is sometimes infectious by contagion, like the
small-pox, and has a similar appearance on the arm.

Dr. Woodville has since acknowledged, that the infant
whose case is above referred to, died of the small-pox, and
not of the cow-pox; but as there are still some persons who
endeavour to prove that the cow-pox is an eruptive disease,
it is necessary to enter a little further into the investiga-
tion of this point.

In the same article of the Supplement to the Encyclope-
dia,
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din, as well as in other publications, we are told, that from the occurrence of such putrid eruptions, in the practice of Dr. Woodville and others, Dr. Pearon draws the following conclusions: that in certain circumstances, and under the circumstances of certain co-operating agents, the vaccine pocks produce effects resembling the small-pox, and of course the putrid in the inoculated part is very different from that of the vaccine pox ordinarily occurring, and the eruptions resemble very much, if not exactly, some varieties of the small-pox; that in some instances these eruptions had occurred, although the inoculated part had exhibited the genuine vaccine putrid; that the matter of such eruptive cow-pocks, whether taken from the inoculated part, or from others, universally, or at least generally, produces similar eruptive cases, and has not, as Dr. Pearon believes, been seen to go by, passing through different circumstances, to the state in which it produces what is called the genuine vaccine disease.

In the same article it is stated, that Dr. Woodville says, if the inoculated part assumes a putrid form, though it continues only one or two days, the inoculation is as effectual as where it proceeds through its regular course. This, as well as the former opinion, being founded in error, the more widely it is diffused, the more necessary it is to correct it. One instance, proving its fallacy, may be seen in the Medical Journal for February, 1801, in a letter from Dr. Harrison to Sir Joseph Banks; and many others in the various authors who have written on vaccination.

Here it may not be superfluous to remark, that the term putrid, however common, is not expressive of the cow-pock, which is a vesicle, or cellular continuation.

With regard to the other opinion advanced in the Encyclopedia, namely, Dr. Pearon's, that in certain circumstances, and under certain circumstances, cow-pock matter is capable of producing a diseased resembling the small-pox,—it is proper to lay before the reader such arguments and facts as may enable him to form his own judgment.

In the London Medical Review for April, 1800, Mr. Blair called the attention of the faculty to an examination of this question, and contended, that either the matter used in these inoculations was contaminated, or the cow-pox is a putrid disease, and capable of communicating infection by effluvia. That conclusion he founded on two cases which occurred in the practice of Mr. Ring, and which Mr. Ring had related to the Medical Society. With matter taken from one of these patients Mr. Blair inoculated a child, and produced a putrid disordered, which, like the former, was not distinguishable from the small-pox, and, like the small-pox, proved infections by effluvia; for another child in the same apartment caught the disease.

The matter which occasioned this eruptive disorder, was obtained by Mr. Ring from Dr. Pearon, and by him from Dr. Woodville; and this event furnishes one proof, out of many, of the melancholy effects of practicing vaccine inoculation at the Small-pox Hospital. In the Medical Review for May, 1800, Mr. Ring observes, that the appearance of a considerable eruption, in the two cases referred to by Mr. Blair, occasioned a variety of conjectures at the time; but no one who had seen much of the practice with genuine cow-pock virus, could then possibly entertain a doubt that the matter was variolated by some means or other. Whether this contamination took its rise from a variolated lacet, or a variolated atmosphere, he does not pretend to determine, not having seen the matter, nor the lacets, till the moment when inoculation was about to be performed.

He then states, that for the space of six months he had used matter from the Rock of Dr. Jenner, which had not produced putrid eruptions, and quotes an extract of a letter from Dr. Jenner, to prove that the cow-pock is not infectious by effluvia; adding, that even the casual disease, when most severe, has never been suspected to be capable of infecting any person, except by contact.

In the Medical Review for June, 1800, Mr. Ring states, that the opinion which he had ventured to advance in the Medical Journal for August, 1799, in opposition to the hypothesis of Mr. Hunter, and other celebrated physiologists, to the effect that two mobil actions in the same subject, at the same time, are incompatible, was then confirmed by two additional cases, published by Dr. Tracey in the New York Medical Repository; and also by a case of co-existence of the cow-pox and meases, which had lately occurred in his own practice. In this case, which he showed to Dr. Jenner, Dr. Marshall, and other medical practitioners, the meases appeared on the eighth day of vaccination; yet the cow-pock was neither superceded nor retarded by that disease. This, and many other instances of the co-existence of eruptive disorders, which he has related in his treatise on the Cow-pox, corroborate the opinion, that the putrid eruptions in patients under vaccination at the Small-pox Hospital and elsewhere, owe their origin to the small-pox and not to the cow-pox.

In the Medical Review for July, 1800, he published some additional observations on this subject, in which he states, that he had lately seen three instances of the small-pox, in consequence of the infection of matter obtained from the Small-pox Hospital as cow-pock matter. In the same letter he expressed his surprise, that Dr. Woodville was not yet convinced of his error. Dr. Woodville having advanced an opinion, that in those places where the small-pox is epidemic the cow-pox produces putules, Mr. Ring observes, that where the small-pox prevails, it is more reasonable to ascribe these eruptions to the action of various matter, than to say, that where the small-pox prevails, the cow-pox produces putules.

In the same publication for September, he inferred some further remarks on the same subject, in which he states, that he had since known several instances in which the small-pox was excited, instead of the cow-pock, by supposed vaccine matter procured from the Small-pox Hospital, and from Dr. Woodville; and expresses his doubt whether it was of advantage to the public, that any species of inoculation should till be practiced at the Small-pox Hospital. He adds, 'for my own part, I must confess, that however useful it has heretofore been in this respect, its utility ceased on the introduction of the new practice by Dr. Jenner. Either that Augelian stable ought to be cleansed, or to serve as a mere petticoat for the reception of such as are seized with the natural small-pox. It was not designed to propagate that disease, nor to disseminate a deadly pestiferous.'

In the same paper he affirms, that when persons already infected with the small-pox are vaccinated, the cow-pock sometimes appears to mitigate, and at others to supercede the small-pox; but that this rule was not without an exception, on which account he thought much greater caution necessary in the practice of vaccine inoculation than had lithero been observed.

In his treatise on the cow-pock, he has given a full detail of the rite and progress of vaccination in the metropolis, and an analysis of Dr. Woodville's publications; proving that the disorder which had created so much alarm, and greatly retarded the progress of the new inoculation, was, in reality, not the cow-pock, but the small-pox!

§ 3. The comparative Advantages of Vaccination.

The following comparative statement of the advantages of
of the new practice is, in a great measure, taken from
Ring's Compendium of Vaccination.

The natural small-pox is a loathsome, infectious, painful, and fatal disease. It is confined to no climate; but rages
in every quarter of the world, and destroys a tenth part
of mankind. Those who survive the ravages of that dreadful
disease, are often tormented by the same blisters and deformities
as those who died of the disease. It frequently leaves behind it
the same blisters and deformities as the natural small-pox; which
are the more deplorable, as they were brought on by a voluntary act.

The inoculated small-pox also is loathsome, infectious,
painful, and sometimes fatal; and when partially adopted,
forms the contagion, and increases the mortality of the
disease. It occasionally occasioned the same maladies as the
natural small-pox. It frequently leaves behind it the same
blisters and deformities as the natural small-pox; which
are the more deplorable, as they were brought on by a voluntary act.

The inoculated cow-pox scarcely deserves the name of a
disease. It is not infectious; and, in the opinion of the
most experienced practitioners, has never proved fatal. It
carries no other disease. On the contrary, it has often
been known to improve health; and to remedy those dif-
cases under which the patient before laboured. It leaves
behind no blisters, but a blushing—one of the great evils
befall on man—a security against the future infection of
the small-pox.


The following instructions for the practice are also taken
from Ring's Compendium. Cow-pox matter may be taken
at any period, from the first appearance of the pustule, till
the areola begins to form, by small punctures; allowing it
time to flow; or promoting the discharge by gentle pressure
with the lancet. It must be taken with great caution;
otherwise the intention of the inoculator may be frustrated,
or violent inflammation and ulceration of the arm may
cultivate.

The cow-pox matter is to be injected, by a superficial
puncture, into the middle of the arm, between the shoul
der and the elbow; or, when the arm is likely to be much used,
into the in side of the leg. Mute matter is preferable to dry;
but those inoculators who have not a constant succession of
patients, and cannot readily procure a fresh supply of
matter, should prefer it on vaccinators for future occasions.
In this manner, when kept in a cool place, it may be
preserved several months.

§ 5. The Manner of preserving Cow-pox Matter.

Cow-pox matter may be preserved, and conveyed, on the
point of a lancet; that is, a bit of ivory, shaped like
the tooth of a comb, and pointed like a lancet.

When the matter is intended to be sent to a distant place,
or to be kept long, the vaccinator should be charged sev-
eral times. It should not be dried before the fire; and,
when suffered to dry on a lancet, should not be kept above two
or three days. When dry matter is used, it should not be
moistened previously to injection; but the longer it has been
kept, the longer the point of the instrument ought to re-
main under the cuticle, that it may have time to dissolve.
When fluid matter is used, the lancet should be washed in
cold water, and wiped dry after every puncture.

Various other methods have been contrived for the preser-
vation and conveyance of cow-pox matter; but the ivory
lancet, invented by Dr. de Carro, and the vaccinator above-
described, invented by Mr. Ring, which is generally con-
dered an improvement of it, being much cheaper and more
portable, are now commonly preferred. When vaccinators
are to be sent to a moderate distance, they may be wrapped
in paper; but when they are to be sent to a great distance,
they may be inclosed in a quilt, to be carried with white
wax. Sealing wax is not proper for this purpose; because
it cannot be employed without heat, which is extremely
prejudicial to the matter. When a vaccinator is to be used
for inoculation, a small oblique puncture is first to be
made with a lancet; and the point of the vaccinator is to be in-
fected, and held in the puncture some time, and afterwards
repeatedly wiped on the part; in order to imbibe, if possible,
the lodgment of the matter.

General Observations on the Practice.

One cow-pox is generally supposed to be a security against
the future infection of the small-pox; but when the patient
refuses at a distance, or is in danger of catching the small-
pox, it is proper to inoculate in both arms. Another reason
for inoculating in both arms is, that a more copious supply
of matter is thus afforded for future inoculation.

Those who have been exposed to the infection of the
small-pox, ought to be inoculated with the cow-pox, which
those who have not had the small-pox, by blunt or rusty lancets;
be taken from a spurious pustule, or from a genuine
pustule at too late a period; or by that which has been kept
too long, or dried before the fire. When there is any irre-
public, should no longer be suffered to disseminate a malignant poison, or to scatter the seeds of death with impunity.


The prejudices against vaccination are similar to those which formerly prevailed against the inoculation of the smallpox. They proceed partly from ignorance; but self-interest has also a considerable share in exciting them, as is too evident in the conduct of certain individuals, who wish to profit by the credulity of the public, and to enrich themselves by the inoculation of the smallpox.

One of the prejudices against vaccination is, that it produces other diseases; another, that it is no security against the future infection of the small-pox. With respect to the first, it may perhaps be sufficient to observe, that no such diseases are produced by the cow-pox in the casual way, though much more severe than under inoculation, nor in the children of persons in a respectable situation of life. Those which are ascribed to this cause occur chiefly in the children of the lower classes; and are occasioned by want of care, and of cleanliness or other causes to which the poor are, in all countries, in some measure, unavoidably exposed.

These disorders, which used to be concealed as much as possible by parents, and other parties concerned, have lately been dragged into light; and accounts of them have been circulated with great industry, and with the most shameful exaggeration and misrepresentation. It has, however, been proved, that they are less frequent than they were before vaccination was introduced into practice; and that even in Gloucestershire, where the natural cow-pox has been most known, and best understood, no person has ever applied to the Infirmary for any disease, supposed to be occasioned by the cow-pox.

We shall conclude this article with an extract from the Report of the Royal Jennerian Society for the Extirpation of the Small-pox, dated October 1, 1807.

"The Directors congratulate the public on the very favourable opinion which the Royal College of Physicians of London, after a most minute and laborious investigation, made by command of his majesty, have a second time expressed on the subject of vaccination, in their Report laid before his house of commons, in the last session of parliament; in consequence of which the sum of twenty thousand pounds was voted to Dr. Jenner, as a remuneration for his discovery, in addition to ten thousand pounds before granted.

"In this Report, the college of physicians, after premising that they advance nothing but what is supported by multiplied and unequivocal evidence, assert, that the testimonials before them are decided in declaring, that the cow-pox is much milder, safer, and much less apt to cause other diseases than the smallpox; that the monstrous diseases attributed to vaccination, are either the inventions of designing, or the mistakes of ignorant, men; and that the prints and publications which have been so widely circulated, in order to alarm timorous and uninformed parents, originate either in gross ignorance or wilful misrepresentation.

"They are also of opinion, that if due encouragement were given to vaccination,—if the public were fully informed of its advantages, and the benefits of this salutary operation were everywhere offered to the poor free of expense, it would in time supercede the inoculation of the small-pox.

"One particular advantage of the cow-pox is, that it protects those individuals who submit to the operation, without endangering the health of the community at large; whereas the inoculation of the small-pox keeps up a continual source of contagion, and increases the fatality of the disease."

In fine, the college of physicians declare, "that they feel it their duty strongly to recommend the practice of vaccination; that they have been led to this conclusion by no preconceived opinion, but by the most unbiased judgment, formed from an irrefutable weight of evidence which has been laid before them; and that when the number, the respectability, the disinterestedness, and the extensive experience of its advocates, are compared with the false and imperfect testimonies of its few opposers,—and when it is considered that many who were once adverse to vaccination have been convinced by further trials, and are now to be ranked among its warmest supporters, the truth seems to be established as firmly as the nature of such a question admits; so that the College of Physicians conceive that the public may reasonably look forward with some degree of hope to the time when all opposition shall cease, and the general concurrence of mankind shall at length be able to put an end to the ravages, at least, if not to the existence of the small-pox."

"It is highly satisfactory to observe, that these opinions of the royal college of physicians of London are supported by the concurrent testimony of the other colleges of physicians and surgeons in the United Kingdom.

"The Royal Jennerian Society, aware of the necessity of using their utmost exertions for accomplishing the great object of their institution, continue to offer gratuitous vaccination to all descriptions of persons, at their Central-house, No. 14, Salisbury-square, Fleet-street, and at their other stations in different parts of the metropolis; as well as to afford their utmost assistance in extending its benefits, by the distribution of vaccine matter, with proper instructions, and by all other means in their power: and, they trust, a generous public will enable them further to promote a practice, which is so essential to the prosperity of the British empire, and to the welfare and happiness of mankind.

We refer those who wish for further information on this important subject, to Dr. Jenner's Inquiry into the Causes and Effects of the Variola Vaccine, or Cow-pox; Dr. Pearson's Inquiry concerning the History of the Cow-pox; Dr. Woodville's Reports on Vaccine Inoculation; Dr. Willan on Vaccine Inoculation; the Evidence at large, in the Report of George Jenner; Practical Observations on the Inoculation of the Cow-pox, by Mr. Bryce, member of the Royal College of Surgeons of Edinburgh; the London Medical Review; the Medical and Physical Journal. Also, A Treatise on the Cow-pox, 2 vols. with plates; a Compendium of Vaccination; an Answer to Mr. Goldson; an Answer to Dr. Mofeley; an Answer to Mr. Birch; and a Rowland for an Oliver, containing an Answer to Dr. Mofeley and Mr. Birch, by Mr. King, member of the Royal College of Surgeons of London, to whom we are indebted for this article.

COWRING, in Falconry, the quiver of young hawks, who shake their wings, in sign of obedience to the old ones.

COWRY, or KOWRY, in Commerce, a small shell used in Hindoostan, particularly at Calcutta, as a small coin, and brought from the Maldives in exchange for rice. Cowries are also used as current coin in Africa. It is said that about 100 tons of cowries are annually shipped from England alone to Guinea. These are originally imported from the Maldivian islands to Bengal, and from Bengal into England. In Bengal 60 cowries make a paisa, and 60 or 65 ponies, as there are few or many cowries in the country, make a rupee. There is, however, a great variation in the value of cowries in Bengal. Ricard says, that 2560 make a rupee; Bolts says, 4000 to 4800 are of the same value; and Stavrouinis makes a rupee equal to 4800, and as high as 4000.
as 1400. Others say, that in Bengal 1400, more or less, are equal to a shilling; and yet, notwithstanding the incredible smallness of the denomination, some articles in the market may be purchased for a single cowry. In the inland parts of Africa, they are about ten times as dear, varying from 220 to 280. Mr. Beaufay was told that in Kaffirland they were at the rate of about 250. Mr. Park reports that they are about the same price at S$90, but cheaper at Tombuctoo, which is about the centre of the cowry country; dearer towards Manding, which is the western extremity of it. Hence they are probably carried in the first instance to Tombuctoo, the gold market, and thence distributed to the East and West. Their circulation seems to be confined between Bornom, where they have a coinage of base metal, and Manding.

COWSLIP, in Botany. See Primula eirens.

COWSLIP, Virginia. See Dodonæum.

COWTENS, in Geography, a place of America, in S. Carolina, between Pascoet river, and the head branch of Broad river, where general Morgan gained a considerable victory over lien. col. Tarleton. Jan. 13, 1781.

COX, RICHARD, in Biography, a learned prelate, was born of mean parents in Buckinghamshire, in the year 1499. He received his grammatical instructions at Eton; from whence he obtained a scholarship in King's college, Cambridge, of which he was afterwards a fellow; and, in the same year, 1519, he took his degree of B.A. From Cambridge, at the invitation of cardinal Wolsey, he went to Oxford, where he was appointed a junior canon of Cardinal college, and admitted to the same degree as he had before taken at Cambridge. In 1526, having performed with much credit his regular exercises, he proceeded to the degree of M.A. He was now greatly distinguished, as well for his moral conduct, as for diligence and affability as a student; but his zeal for the opinions of Luther, and his desire of extending the limits of the reformation, rendered him obnoxious to his superiors, who stripped him of his preferment, and threw him into prison. Here, however, he was not long confined: and, upon his release, he was chosen master of Eton school, over which he presided with great credit and usefulness. Through the interest of archbishop Cranmer he was raised to several important dignities in the church, and was appointed preceptor to prince Edward; on whose accesion to the throne, he was sworn of the privy council, made king's almoner, and appointed chancellor of Oxford, canon of Windfor, and dean of Weilmünster. In some of these dignities his great zeal for the reformation led him to destroy a number of curious and valuable books, for no other reason than to shew his hatred to the catholic cause, by the abettors of which they had been written. On the accession of queen Mary, religious zeal and bigotry were turned against him. His preferments were forfeited, and himself once more imprisoned; but he fortunately obtained a speedy release, of which he took advantage, and left the kingdom. At Strasbourg, whither he went, he was permitted, with others of his countrymen, to execute public worship according to the forms established in the reign of Edward VI. On the death of the queen, who, on account of the cruelties and murders which disgraced her reign, has justly obtained the title of bloody Mary, Cox returned to England, and, with other divines, was appointed to revile the liturgy. He was elevated to the see of Ely, which he continued to enjoy upwards of twenty years. His infamous opposition to certain relics of popery, upon which he often preached, and his defence of the marriage of the clergy, prevented him from rising very high in Elizabeth's esteem. She even, in the latter years of the bishop's life, alienated from him, much of the property belonging to his see. He refused this stretch of royal authority, but the arm with which he contended was too powerful for him, and he was eventually forced to promise resigning his bishopric, and to retire upon a small pension. There was, however, too much virtue in his brethren to induce any one to accept of his benefice on such ignominious conditions. Dr. Cox, therefore, continued in his office till death deprived him of the honours, and released him from all the vexations of life. He died at the age of 81, in the year 1581, leaving behind him a character for great learning and integrity; but he was a fervent enemy to those who differed from him, and the perverter of papists and puritans. He was author of many works of considerable citimation on theological subjects; and was principally concerned in the compilation of the Liturgy of the Church of England: he translated the Gospels and Acts of the Apostles, and the Epistle to the Romans, in the new translation of the Bible in the reign of queen Elizabeth, and is supposed to have been concerned in the composition of Lilly's Grammar. Some of his letters to the queen are to be found in Strype's Annals of the Reformation.

Cox, Richard, distinguished as lord chancellor of Ireland, and historian of that country, was born at Bandon, in the county of Cork, in 1670. By the death of his father, the care of his education devolved upon an uncle, who put him to a country grammar-school, and afterwards attended him to an attorney, a profession which he followed till he obtained as much money as was sufficient to enter his name on the books of Gray's Inn, with a view of being called to the bar. Having attained his object, he returned to Ireland, married, and commenced farmer. In this line he continued about seven years, when he was called into activity as a lawyer. Under the patronage of Sir Robert Southwell he was appointed recorder of Kinfale in 1680; but the zeal which he at all times exhibited in defence of protestants, rendered his abode in Ireland unsafe. He accordingly withdrew to England, and settled at Brtifol, where he wrote his Histories of Ireland, which was published in 1759. Previously to this, he had made himself known by a smaller work, to show the necessity of calling the prince of Orange to the throne of these realms, and of sending an effective force to Ireland. Early in the reign of the illustrious William he accompanied his friend Sir Robert Southwell to Ireland, in the quality of secretary: his services in this station were rewarded by a judicious gift in the common pleas, and by being made military governor of the city and county of Cork. His conduct in this station has been censured on account of the rigour which he exerted upon the natives, whom he treated as a conquered and hostile people. His severity was tempered with justice, though not softened by clemency: he inflicted upon the faithful obervers of the Articles of Limerick, which were promulgated since, as being too favourable to the catholics. It is to his honour that he gave up his employments, rather than his integrity, in this particular; which were restored to him till the year 1701. His advice was sought by the ministers of queen Anne, who, in 1703, raised him to the office of lord chancellor of Ireland, which he filled with much credit, during four years, when, being dismissed, he retired into the country, and spent his time in the improvement of his estate, and in the study of divinity, to which he was much attached. From the country he was called to the post of chief justice of the queen's bench in Ireland; but on the accession of George I. he was removed from the bench, and from his seat in the privy council, and fell under the cenure of the house of commons, on account of his too great attachement to the power of the crown. He now withdrew from public life, and, in 1733, he died at the age of 83.
His principal work as an author was "Hibernia Anglicana; or, the History of Ireland, from the Conquest thereof by the English, to the present Time." BRAG. B. I.

COX'S, in Geography, a town of America, in the state of Virginia, 152 miles W.S.W. of Philadelphia.

COXAE, or COXENDICUS offa, in Anatomy, are terms applied to the offa inosinata.

COXAMARGUILA, in Geography. See CXAMAR-

GUILA.

COXIE, MICHAEL, in Biography, an eminent painter, born at Mechlin, in the year 1497. At a very early age, he was placed under the tuition of Bernard Van Orley, from whose instructions he derived considerable benefit; but it was in Rome, from the lessons of the divine Raffael, and from contemplating and copying his productions, that our young artist caught a ray of the excellence of that great master. He sojourned many years in Rome, where he married. The reputation of his abilities occasioned his being employed, upon his return to Flanders, in decorating many of its principal churches, where several of his pictures, evincing no small degree of merit, still remain. Many of his other productions, during the war with Spain, were carried to that country, where they are held in high estimation.

But however great the reputation Coxie enjoyed through life, and however generally his pictures have been esteemed since his death, he yet has not escaped censure; and he is accused of having too frequently availed himself of the studies which he made from Raffael, by introducing the figures of that great master into his own compositions.

Towards the close of his life, having become very rich, he built three houses in Malines, which he furnished with his own performances. His pictures, though from the length of his life, and his incessant application, very numerous, are yet rarely to be met with. Coxie was killed by a fall from a scaffold in 1592, in the town-hall of Antwerp, where he was painting, at the very advanced age of 95 years.

We shall only notice the following works of this artist.

In the church of Notre Dame at Antwerp, is a "Holy Fa-

mily," by him, which frequently excited the admiration of Rubens; and in the same church he painted a "St. Se-

ebtian," a "Crucifix," and several portraits, just imitations of nature, and highly expressive.

If, as Vafari has affirmed, Coxie was the inventor of those beautiful compositions of the story of Cupid and Psyche, engraved in 32 plates, by the school of Marcanto-

nio, the greatest eulogiums would be due to him, as the author of some of the most exquisite productions of the art. The style of Raffael, however, in these prints, appears so evident, that we can scarcely hesitate to pronounce, that upon this occasion, as on some others, the Florentine biogra-

pher has been mistaken. Defamps. Vafari.

COXHALL, in Geography, a township of America, in the county of York, and district of Maine, containing 773

inhabitants.

COXHILITI, in Ornithology, the CRAX rubra of Gmelin; which is.

COXHAKIE, in Geography, a township of America, in the western part of Aitcbury county, and state of New York, containing 3496 inhabitants; of whom 302 are

blacks, and 612 electors.

COXSWAIN, on board a ship. See COCKSWAIN.

COXWYCK, in Geography, a town of Norway, 44 miles N.N.E. of Romford.

COYA, or COYER, a venomous insect in South America, of a fiery red colour, and about the size of a bug. The poisonous juices of this insect, when applied to the skin of any animal, are often fatal. However, the Indians have an antidote against it, in the dried items of an herb.

COYAMATL, or QUARQUINTAMATL of Fernandez, in Zoology, the tajara or Tararuga, and the front of Buffon, the Mexican hog of Peanatt, and Syl Tujaja of Gmelin; which is.

COYAU, in Geography, a settlement of America, on the river Tennessee; 30 miles below Knoxville.

COYDALLA, in Ancient Geography, a town of Asia Minor, placed by Ptolemy in the interior of Lybia.

COYEGEM, in Geography, a town of Flanders, 14 leagues from Brussels.

COYL, a river of Hindostan, which rives 30 miles N. from Chota Nagpore, in the province of Bahar, and joins the Soonk, 34 miles S. of Coupour; by their junction they form the Brahme.

COYLAN, or QUILON, a Dutch factory, now in the hands of the English, about 14 geographical miles to the N.N.W. or N.W. of Aniessa. Along the whole coast from Coylan in N. lat. 8° 51', to Craganore, in N. lat. 10° 21', there is a vast alluvial of lakes, that extend in some places 30 miles inland, and are the repose of the waters which spring from the west side of the Gault; the whole country here being very flat, marshy, and un-

wholesome.

COYOLCOS, in Ornithology, the coyolcogue of Her-

andez, Ray, &c. the letters Mexican quail of Latham, is a species of Tetrao (which is). in the system of Gmelin.

COYOLTOTOTL of Fernandez, the red conuga of Cayenne of Buffon, the red chatterer of Latham, the red bird from Surinam of Edwards, and Amphil- euminus of Gmelin; the specific character of which is, that it is red, with its occular band, and tips of the quills of the wings and tail black. It is found in New Spain, Guiana, Cayenne, and Surinam. It is about eight inches long. See COTINGA.

COYPEL, NOEL, in Biography, a French painter of considerable eminence, born in Normandy in 1628. Guisen Coupel, an artist of no note, the father of Noel, perceiving his son's predilection for the pencil, placed him under the tuition of a painter named Poncet, the disciple of Vouet. He soon, however, quitted his master, and, at the age of fourteen years, went to Paris. There accident made him known to Quillerier, who, admiring the boy's talent, took him under his care.

He remained some time with Quillerier, and so rapid was his progress, that he was shortly afterwards employed at Versailles, under Charles Errard, and was thought worthy of receiving a stipend equal to that of other more experienced professors.

In 1608 he was made a member of the royal academy at Paris, and a few years afterwards was by Louis XIV. appointed director of the French academy at Rome, which station he filled several years, with credit to himself, and great benefit to the students over whom he presided. He returned to Paris, where he enjoyed the favour of the king until his death, which happened in the year 1709.

Coupel's works denote considerable fecundity of invention, and although of a style decidedly French, polities expres-

sion joined to sufficient correctness of design, and a good tone of colouring.

His performances are very numerous. In the church of Notre Dame at Paris is a picture from the pencil of Noel, representing St. James the Greater converting a Gentile at the place of his execution. He also painted Cain killing Abel in one of the halls of the royal academy, and a Trinity and an Assumption in the church of Invalids. He is said to have etched two or three plates in aquafortis. Ex-

trait des differens Ouvrages, &c. Histoire.

COPPEL, ANTOINE, the son of Noel, born at Paris.
CROY, in 1567, accompanied his father to Rome, and thoroughly studied in that city the works of Raphael, Michelangelo, and Annibale Carracci, with such benefit that shortly afterwards became a successful candidate at a public concurrence of the young artists of the academy, and bore away the prize. He then undertook a journey to Lombardy, to contemplate the masterpieces of Correggio, Titian, and Paul Veronese.

Upon his return to Paris, he displayed evident proofs of his profiting no inconsiderable degree of talent. At the age of 20 years he was made a member of the royal academy, and was afterwards appointed principal painter to Monnifeur the king's brother. The duke de Chartres was also particularly partial to our artist, for learning that advantageous overtures had been made to induce him to go to England, this prince visited him incognito, and prevailed on him to remain in his native country.

Having painted the middle of the vault in the royal chapel at Versailles, the king, to recompense the ability he had shewn in that work, appointed Antoine his principal painter, and granted him letters of nobility. In 1707 he was made professor of the royal academy, and in 1714 he became director.

One of his last works is the grand gallery of the palace royal, in which he has represented the principal actions of the Ancients. His intense application to this and his other productions, and the fatigue he underwent, threw him into a sickness which terminated his life in 1722.

Few painters have better understood the poetry of the art, or have better instructed in history and fable, than Antoine Coypel; and his works, though they flew the manner, posses great spirit. He made Rubens his model for colouring, and succeeded in giving all through sometimes an exaggerated expression to human figures. Two of his finest pictures are in the church de Notre Dame, one representing Christ disputing with the Doctors, the other the Assumption of the Virgin. The halls of the academy, the chapel at Versailles, and many churches in Paris, also contain the productions of this artist. He engraved with his own hand several plates which are engraved by Heinecken. Extrait des différents Ouvrages. Heinecken.

COPEL, NOEL NICOLAS, was also the son of Noel Coypel, and born at Paris in 1692. He had only the benefit of his father's instructions until he was 15 years old, but he compensated for the loss he sustained by his industry in studying the ancient statues and other works which might contribute to his advancement. In the year 1720 Noel Nicolas was admitted a member of the royal academy, and thirteen years afterwards was made professor. He died in 1735.

The churches Minimes at the palace royal, posses one of his bell performances. It represents St. François de Paul, with his companions, paffing the sea, supported only by his mantle. We have a few etchings by this master, one of which represents the triumph of Amphitrite; another a Sleeping Nymph inspired by a Satyr. Extrait des différents Ouvrages. Heinecken.

COPEL, CHARLES ANTOINE, the son of Antoine, was born at Paris in the year 1694. He was made member of the royal academy in 1726. In 1720 he was created professor, and afterwards director of that institution. He died in 1732.

One of his principal works is a large picture in the church of La Place de l'Oratoire, in the rue d'Enfer. It represents Christ before Pilate, and is described as an extensive and magnificent composition. He likewise was employed upon many works from fable and prose fable, for the tapestries of the goblins. Like others of his family he sometimes adorned himself with engraving. His productions in this way are enumerated by M. Heinecken. Extrait, &c. Heinecken.

COYRUS, in Zoology, a species of mouse, found in Chili. See Mus Coypus.

COYER, ANTOINE, an able sculptor of Spanish extraction, born at Lyons in 1642. At the age of 17 he went to Paris, where, after having wrought several years under the most eminent sculptors of that city, he was employed upon many works by cardinal de Furnesburgh, and afterwards conducted by him into Germany. Upon his return to Paris he chiselled many statues for Louis XIV. for the royal gardens at Versailles and Marly, and amongst other productions, executed the bronze statues of that monarch, both on foot and on horseback. He was sometime director of the academy, Orleans.

COZCAQUAULTLI, in Orinibaghe, king of the vallees of Edwards, and VICTOR PAPA of Gmelin, which see.

COZES, in Geography, a small town of France, in the department of the Lower Charante. 5 miles S.W. of Santes, and in the district of that name. It has 1839 inhabitants, and is the chief place of a canton which in fifteen communes, and upon a territorial extent of 222 kilometres and a half, comprises a population of 12,335 individuals.

COZOLA, in Ancient Geography, a town of Asia, in Greater Armenia. Ptolomy.

COZILOCOTFELLALLIN of Fernandez, in Zoology, the eigellium of Buffon, varied squired of Pennant, and SCAPUS versicolor of Gmelin; which see.

COZUMEL, in Geography, an island of North America, near the coast of Yucatan, inhabited by native Indians; the country is fertile, and abundant in fowl and cattle; 40 miles long, and from 3 to 10 wide. N. lat. 19° 40' W. long. 85° 51'.

COZZA, FRANCESCO, in Geography, an historical painter, born at Palma in 1625. He was one of the scholars of Domenichino, and after the death of that great master, was employed, with others of his felowrows, to complete some of his unfinished works. Although this circumstance evinces him to have been an artist of considerable merit, we do not find that he attained any great eminence. He died in 1682.

One of his best works is a madonna in the church of S. Francesca at Rome, where he chiefly resided. LANZI.

COZZA, GIANBATTISTA, an historical painter, born at Milan in 1676. At an early period he domiciled himself at Ferrara, where he enjoyed considerable reputation until his death, which happened in 1742. His works are numerous in the churches and convents of that city. LANZI.

COZZANO, in Geography, a town of the island of Corfca; 21 miles E. of Ajaccio.

CRAANEU, THEODORE, in Geography, an eminent physician and teacher of medicine, flourished in the middle, and latter part of the seventeenth century. After practising some years at Nimègue, he went to Leyden, where he was appointed one of the professors in medicine, and physician, and Aulic counsellor to Fredeiic William, elector of Brandenburgh, an honour which he continued to enjoy to the time of his death, which happened March 27th 1688. His works, which were numerous, were collected together a year after his death, and published at Leyden, in two volumes 4to. The principal of them, "Lumen Rationale Medicin," afterwards entitled, "Tractatus Pyfico-Medieus de homine, tabulis aequis illustratus," has been frequently reprinted, and...
CRAB.

and contains among such that cannot be commended, some useful observations. There is a good delineation of the thoracic duct, but his anatomical figures are in general far from being correct. "His zeal for the Carteian system, Haller observeth, to which he made his physiology bend, led him into great errors;" and even those parts of his work, which gained him most credit, have been superseded by the labours of later anatomists.

CRAB, in Zoology. See CANCER, and CANCER Pagurus.

CRAB, in Commerce and Domestic Economy, is particularly applicable to the Cancer menas of Linnaeus. An account of this species will be found under the article Cancer; but as it is the only one of the genus which is used as food in Europe, it requires a more particular discussion than properly belonged to our scientific arrangement.

Of the various modes of catching crabs the most simple is that of searching under the stones of a rocky beach at the time of low-water. Numbers are thus found in the crevices of the stones. When the stones are small they are removed, but where they are large, a flick, with a hook fastened to its extremity, is thrust into the holes or crevices, to which the crab attaches itself by means of a cord or string. The animals, when the water flows, come to these places, drag the flick into their holes, and the stone, which is drawn with it, closes the entrance, and prevents them from making their escape. When the water falls, the fishermen remove the stones, and, by means of an iron hook fastened to a flick above 3 or 4 feet long, they draw out the crabs from these recesses. The crabs are able to drag these stones by the assistance of the buoyant power of the water; but when left dry, by the ebbing of the tide, the stones without that assistance are too weighty for the efforts of the crabs to be able to remove them.

Notwithstanding the apparent simplicity of this method for catching these animals, it presents a curious illustration of the application of gravity, as varying in different media; and we doubt not but the principle might be extended, in many cases, as an useful mechanical power. It is necessary that the stone be large enough to fill the hole sufficiently to prevent the exit of the crab, and, at the same time, light enough to be dragged by him with the flick. By the construction of his body and claws he will be able to pull what he could by no means pull along, so that the stone may be lighter than what at first sight might be imagined. Of all this, experience has taught the fisherman to judge.

From Berwick-upon-Tweed northwards, as far as Aberdeen, wherever the shore affords a situation favourable to these animals, they are caught in a fort of baffet or trap called a creel, or creel. See Plate 111. Miscellaneous, fig. 6. These creels are generally about five feet long and two feet wide, and nearly of a cylindrical form, cutting off a transverse section to form the base. They are made with flaps of thin wood or deal for the bottom, and of wooden hoops for the curve, over which is woven a strong net. From each end the net-work is wrought inwards into a narrow entrance, something similar to the plan of a common wire trap for rats or mice. A bait, made of such garbage as before mentioned, is suspended within about the middle of the trap, that it may be visible to the crabs and entice them into the snares. The whole of this apparatus is then sunk in the water by means of a large flat stone, which is fastened to its bottom. A rope of sufficient length is tied to the top, by which it can be lifted up; and by a buoy or float made of cork, and fixed to this rope, the fishermen are directed to the spot where the creel is placed. The crab enters, falls down, and cannot get out again on account of the entrance projecting over his head. The coil of one of these creels is from eight to ten fathoms. In warm weather the fishermen drop them near the shore, in from three to five fathoms water. In cold weather the crabs go further off for deeper and consequently warmer water, but they are always on rocky ground.

As an article of commerce crabs are sometimes brought from Norway, along with lobsters in vessels particularly adapted to the purpose. On the rocky coasts of that country they are extremely abundant. As a domestic source of wealth in Great Britain, the catching and sale of these animals furnish a share of employment and support to numerous industrious families. It is joined with the general trade of a fisherman, who drops his creels, leaves them, and rows farther out to sea for other fish. From twelve at night, in summer, to seven hours into morning, the fisherman goes out to sea, lays his line at dawn, which is the time for the filling, at slack of ebb or flow, when the current of tide does not impede, and returns with his catch; then he draws his creels for shell-fish.

The price of crabs on the different coasts varies with the success of the filling. In the north of Scotland they are seldom above twopence, and are usually as low as a half-penny a-piece. In England they vary from threepence to three shillings.

The sexes are denominated in England the cock and the hen crab. In Scotland they are known by the names of carl and queen, or quin, partons. The common crab, of which we now treat, is always termed by the Scotch a parton. All the other species of cancer, except the lobster, are called crabs. The sexes are easily distinguished from the flap, flag, or apron, which is upon the breast of both. That on the female is large, broad, and look, and, when the animal is alive, is easily opened. That of the male is much smaller and narrower, in proportion to his size, and is opened with considerable difficulty. Under the flap of the male are discovered two thread-like appendages, and below that of the female are two orifices. If the rims of these orifices appear full and plump, the fish may be safely pronounced fresh food; but if they be shrivelled, fallen, or sunk, it proves that the crab has been some time dead, and, when dressed, will be flaky and watery. The male has a bigger body and larger claws, and is, therefore, of greater value than the female; the carl selling generally two-thirds higher than the queen.

The quality of the crab, before boiling, is also discovered by its outward appearance. Those that have a considerable degree of roughness, particularly on the claws, are good; while the bad ones are known by their clear, smooth, and watery-looking shell. The shell of a good one is of a dark-red colour. In chafing them, it is also proper to observe, that such as have small bodies, in proportion to their claws, are generally hell: provided that the crab be offered to the purveyor alive, or rather, unboiled. When boiled, it is almost impossible to be deceived. After picking out the heaviest,
heavief, hold all the claws tight, so that they shall make no noise or rattle. Shake it, and if it jumbles, or sounds as if there were water in it, it is certainly bad; but if good there will be no perceptible motion in the inside.

Crabs are brought to market either raw or boiled, according to the distance, or the known preference of the buyers to one flate rather than the other. Much has been said of the cruelty of the fishers, who endeavour to carry their crabs alive to a distant market, by which they are allowed to linger out life for several days, under the tortures of hunger and suffocation, to which many fall victims. The fact is, that the fisher, in the routine of his trade, seldom reflects on the distinction between cruelty and humanity. Like the far greater part of mankind, he is actuated solely by feelings of pecuniary interest, and accommodates his practice to the pleasure of his customers. That the fish be fresh, or newly caught, is a general recommendation; and the purchasers, in most places, prefer using their own judgment in this respect, by examining the horrid mals of destruction, and separating the dying from the dead.

The crab is peculiarly tenacious of life, and is capable of exerting a considerable degree of muscular force after it has been two days removed from its natural element. The writer of this once saw a crab in that situation, who accidentally got hold of the tip of the tail of a grey-hound, and was dragged to a considerable distance on the street by the dog, who, howling with pain, was unable to get rid of the convulsive grasp of his unwelcome parasite, till the crab was literally dashed to pieces on the pavement.

The crab is often dead to outward appearance when connoisseurs can satisfy themselves that it is yet alive, and still fitted for one of the luxuries of the table. They raise up its apron, and if any spark of life remain it will be exhibited in the exertions of the creature, with its claws, to keep the apron elosed, and its degree of life is estimated from its activity in that respect.

Crabs are in season from eight to nine months in the year; May, June, and July being the only months in which they are not so. The months here specified are, however, generally, and not individually, applicable; the age, size, and sex of the crab causing a variation of a month sooner or later. Some are even good through the whole year.

The length of time during which crabs are boiled is exceedingly different in England from what it is in Scotland; and, follows, in that respect, the distinguishing rules of cookery generally observed in those divisions of the island. The time is counted from the moment the water begins to boil, whether the crabs be put in the water just then or previously. In England they are boiled only fifteen minutes; whereas, in Scotland, they are often kept boiling nearly two hours. Sea water is preferred for boiling thefe, and indeed all other fish; and where that cannot be procured, a quantity of salt is put into the kettle equivalent to a tablespoonful for each crab. It is, perhaps, owing to the length of the time of boiling, that the Scotch, in general, prefer the claws to the body of the parton. The claws are less liable to be injured by overboiling, while the body, taken from the Scotch kettles, is reduced to a dry mass or pulp, and would be reckoned perfectly ufeless on the table of an Englandman, though, when properly boiled, he generally prefers it to the claws. On the contrary, it is common on the coast between Dundee and Aberdeen, and more particularly at the town of Perth, to eat the large claws only and to throw the others, along with the body, to the dung-hill.

It is well known that the change which the animal fibre has sufffumed when it is said to be sufficiently done, or boiled, may be produced in a lower heat than 212 degrees, or that of boiling water. In many kinds of fish, good cooks are careful to keep the water below the boiling point; at least at the commencement of the operation. It may be on this account that crabs are supposed to be better done when they are put into the water while cold, and suffered to expire in torments gradually increased with the heat, than if they were plunged at once into the boiling fluid. Other causes have combined to induce this cruel practice. Crabs, as well as lobsters, are apt to throw off their claws on the sudden stimulus of extraordinary fright or pain; and the body thus separated from its members, is supposed to furnish a less pleasing object on the table of the epicure, and less to display the attention of the cook. However these things may be, it was certainly a praiseworthy inquiry to endeavour to discover, for these ill-fed animals, the shortest road to death, which might, at the same time, be confident with that delicacy of flavour and refinement of appearance which their tyrants and murderers, by boiling them alive, so imperiously require.

In the boiling of lobsters, in particular, a curious change takes place in the colour of their shells. Naturally they possess a colour approaching to black; on a nearer examination, it appears of a deep purple; the colouring matter, in many parts, is too thick to admit the passage of the light to the shell and back again; where it is thinner, it faintly appears like a blue film. This is turned into a pale red by boiling, which is thus accounted for: the colour is merely superficial; it is spread over the white calcareous earth of which the shell is composed; scratching or filing will entirely remove it; the action of boiling water does this in part. It effects also another change; it alters the capacities and form of the pores of the shell. By the first operation, the rays of light, which were absorbed in the dark colour, become reflected; and by the second the colouring matter obtains the power of reflecting red rays rather than any other.

We have already mentioned the mode of distinguishing the sexes from the two thread-like appendages of the male, and the two corresponding orifices of the female. Their intercourse is accomplished, by the females lying on their backs, and receiving the two filiform appendages of the male into her two orifices, or vulvas. What time elapses between this and the exclusion of the ovum we have not been able exactly to ascertain; but when that period arrives, the spawn, or ovum, are exuded through the two orifices, and are often so abundant as to raise the flap an inch and a half or two inches from the shell. During this operation the female is much weakened, and rendered totally unfit for the market.

It is among such animals alone, as thus poises double organs of generation, that true hermaphrodites can be found. The author of this article recollects seeing, in one of the periodical publications of this country, a drawing of a lobster, on which, a line being drawn down the middle of the body, from the head to the tail, one side exhibited all the marks of the male, while the other as completely displayed those of the female, not only in their more peculiar sexual distinctions, but also in the shape of the feales and the fize of each division of the body, as well as of the claws. See article Lobster. Nicholson's Journal for 1826, article Scotch Fisheries.

Crab, in Mechanics, an engine used for mounting guns on their carriages. See Gin.

Crab, in Sea-Language, a wooden pillar, whose lower end is let down through the ship's decks, and rests upon a socket like the capitan: in its upper end are three or four holes at different heights, through the middle of it, above one another; into which long bars are thrust, whose length is nearly equal to the breadth of the deck. It is employed to wind
The crab with three claws is used to launch ships, and to heave them into the dock or off the key. See Plate XVIII. Mechanics, § 1.

Crab carter, in Ornithology, a variety of the Alcedo crassirostris of Gmelin; the martin-pêcheur de la Louisiana of Buffon;—and also to a variety of the Alcidae virgineus, the small bittern of Ray and Sloane, and the Eosin of Buffon.

Cram's Claw, or Cram's Eye, Chldr Cancrorum, in the Materia Medica, the tips of the common crab broken off at the verge of the black part; so much of the extremity of the claws only being used in medicine, as is tinged with this colour. The blackness, however, is only superficial; they are of a greyish white within, and, when levigated, furnish a tolerably white powder: this is of the number of the alkaline abсорbent powders, but superior to most of them. It makes the basis of the famous Gafcogenic powder, the lapis contrayera, and many other of the compound aborptive powders; and is sometimes, though rarely, preferred singly. The compound powder of crab's claws is directed in the London Pharmacopoeia to be prepared by taking of the claws, prepared, one pound, and of chalk and red coral, of each, prepared, three ounces by weight, and mixing them. The compound powder of contrayera is prepared by mixing of powdered contrayera 6 ounces by weight, and of compound powder of crab's claws 1/2 pound.

It is the common opinion, that these crab's eyes act as mere abсорbents in the prime viscer, and extend their efficacy no farther than those palliages. The French memoirs, however, give us an account of their certainly passing into the blood, in a remarkable case. Mem. Acad. Par. 1759.

Cram's Eyes, Ordi Cancrorum, or Lapidis Cancrorum, in Natural History and Medicine, are little, white, round, flake, ordinarily flat; so called, though really taken out of the crab's head, or river lobster: and bearing no great resemblance to eyes, though resembling them more than any other part. They are used in medicine as a powerful alkali, or aborbsent.

The most able naturalists long imagined them formed in the brain of the animal. Van Helmont first found them in the region of the stomach: M. Geoffroy, the younger, has observed the manner of their formation much more accurately. Whilist the shell of the crab, which it calls every year, is hardening, a white nutritious juice, secrerated in two portions of the stomach, forms, by degrees, a soft calcose substantia, of a crucifaceous texture, from successe appositions of the juice. Before the calcifying of the shell, the animal is in a weak and sickly state; takes no food for some days; and in this period the calcific feem to serve for its nourishment. And on this account the crab's eyes are met with only whilst the shell is losing its shell, and for a few days afterwards, and not for a considerable time after this period.

Neumann.

Cram's island, in Geography, derives its name from the number of crabs that are found there. It is considerably larger than St. Cruz; but, from the jeolousy of the European powers, remains uncultivated. The Spaniards had formerly some plantations on it; but government apprehending that the planters might carry on a smuggling trade, they were removed to Porto Rico. In 1715. the English settled there; but they were attacked by the Spaniards, who murdered some, and carried the survivors to Porto Rico. Since this period, the English, Danes, and Spaniards have used this island in common for the purposes of wooding, watering, and fishing. The island is remarkably fertile and has plenty of excellent fresh water. See Dieka.

Crab island, a rocky island of the Arabian gulf, near the coast of Abulfinia. L. lat. 23° 45', E. long. 4° 25'.

Crab Lieue, a troublesome kind of vermin, which tick to fall with their claws to the skin, and to render it difficult to dislodge them. Being viewed with a glass, they nearly resemble the small crab-fish; whence they obtained their popular name. They are also called phylate, morjones, pêtole, and postolote; they usually inflict the arm-prints, eyelids, eyebrows, and palmillas.

They will be quickly destroyed, and drop off dead, upon the application of a rag wet with the milk of sublimate. This form of vermin is vulgarly reckoned to prognosticate mortality to those whom they abandon, without being removed by cold cines.

Crab-Orchard, in Geography, a poft-town of America, on Dick's river, in Kentucky; 8 miles from Cumberland river, and 25 miles S. E. of Danville. The road to Virginia passes through this place.

Crab-Tree, in Botany. See Pycus mutus.

Crab Valley, in Geography, a bay on the west coast of the island of Antigua; two miles S. from Reed Point.

CrabAsia, in Ancient Geography, a town of Iberia or Hispania. Steph. Byz.

Crabet, Wouter and Dirk, in Biography, two brothers, painters on glass in the 16th century. They are said by some to have been natives of France, by others of Germany; but it is most probable that they were born at Gouda in Holland, where they painted the windows of the great church with such force and brilliancy, that the work has been esteemed the most excellent of its kind in Europe. The subjects are from sacred history; the following are the most worthy of remark. A window painted by Wouter in 1564, representing the birth of Christ, and another by Dirk, in 1567, in which is introduced Christ driving the buyers and sellers out of the temple. Dirk died in 1601.

Delcampo.

Crabetie. See Abbelyn.

Crädier, in Zoology, the name given by Buffon to the Dielphus cancrovera of Gmelin.

Crabier, Lartin-pêcheur, in Ornithology, a name given by Buffon to a variety of the Alcedo Senegalensis, or crab-eating king-fisher of Latham:—also, to the Ardea Iudorcia, corvina, &c. &c.

Crabro, in Entomology, a species of Vespula, which bee:— and also a name by Geoffroy to the Tenthera feminata.

Crabrones, a clavis or division of the genus Vespa by Fabricius, including those with filiform antennal.

Cracatoa, in Geography, an island, the southernmost of a group, situated in the entrance of the straits of Sunda. It has a high-peaked hill on the south end, which lies in S. lat. 6° 9', and E. long. 154° 15'. The whole circuit of the island is not more than 3 leagues. Off the N. E. end lies a small island, which forms an anchoring road, and within a reef that runs off the S. end of the latter, there is good shelter against all northerly winds, with 18 fathoms water near the reef, and 27 in the mid channel. To the N.W. there is a narrow pass for boats between the two islands. The shore, which forms the western side of the road, is in a N.W. direction, and has a bank of coral stretching into the sea, about one-third of a cable's length, which makes the landing difficult for boats, except at high water; but the anchoring ground is good, and free from rocks. A little to the southward is a very hot spring, which is used by the natives as a bath.
Creataea is esteemed very healthy, in comparison of the neighbouring countries. It consists of high land, rising gradually on all sides from the sea; and the whole is covered with trees, except a few spots which the natives have cleared for rice-fields. The population is inconsiderable. The chief of the island, like that of all the islands in the Archipelago, is subject to the king of Bantam. The coral reefs afford plenty of small turtles; but other refreshments are scarce and very dear. The latitude of the road in which captain Cook anchored with the Resolution was 8° 36' S.: the longitude by Mr. Bayley's time-keeper, 154° 48' E., and by observation, 150° 30' E.: the dip of the S. end of the magnetic needle was 26° 5'; the variation of the compass was 19° 30' W. On the full and change days, it is high water about seven in the morning; and the water rises three feet two inches perpendicularly.

CRACCA, in Botany, see Vicia cracca.
CRACCA FLORE OBSCURUS, see Vicia pimpliferis.
CRACCA FLORIBUS ALBIS, Buxb. see Vicia dulcicarpa.
CRACCA major, Taber. See Vicia fephum.
CRACCA minor, Taber. see Vicia fephum.
CRACCA minor comis filicis gemelis, Riv. see Vicia tetraperaeum.
CRACCA SYLMATICA, Riv. see Vicia dumentorum.
CRACHE, in Commerce, a piece of coin current at Florence and Leghorn, at three pence.
CRACINAS, in Ancient Geography, an island of the ocean, near the coast of Gallia Aquitania.
CRACKAU, in Geography, a small town of Saxony on the river Pulinitz, in the circle of Meifen, on the boundaries of Upper Lusatia, part of the town being actually situated in Upper Lusatia — Alfo, a Saxou village of the same name in the bishopric of Merburg.
CRACKER, or SEA-PESTISANT, in Orthology, names given by Ray, Willughby, and Albin to the pin-tail of Pennant and Latham, or the Anas Aneta of Gmelin, with an acuminate lengthened tail, beneath black, a white line on each side of the head, and an undulated cinnabar black. It inhabits America, Europe, and the southern part of Asia, and in winter migrates in flocks towards the south as far as Italy and the Caipian sea.

CRACKER, in Pyrotechny, is formed in the following manner: Cut some cartridge paper into pieces 3½ inches broad, and 1 foot long; fold down one edge of each length-wise about a quarter of an inch broad; then fold the double edge down one-fourth of an inch, and turn the flake edge back half over the double fold; then open it, and lay all along the channel, which is formed by the folding of the paper, some meal-gunpowder; then fold it over and over till the whole paper is doubled up, rubbing it down every turn; this done, bend it backwards and forwards about 3½ inches at a time, as oft as the paper will allow; then hold all these folds flat and close, and with a small pinching cord give one turn round the middle of the cracker, and pinch it close; then bind it with a patchthread as tight as possible; and in the part where it was pinched, prime one end of it, and cap it with touch-paper. When these crackers are fired, they will give a report at every turn of the paper; if you wish to have a great number of bounces, you must cut the paper longer, or join them after they are made; but if they are made very long before they are pinched, you must provide a piece of wood, with a groove in it, deep enough to let in half the cracker; this will hold it straight while it is pinching. A cracker is represented complete in Plate I. Pyrotechny, fig. 1.

CRACKOWES, in British Antiquity, a sort of long-pointed shoes that were used in the 14th century and after.

wards, and in which it was impossible to walk till they were fastened to the knees with chains. The upper parts of these shoes were cut in the form of a church-window: accordingly Chaucer's parson clerk Abalum.

"Had Paul's windowes coven on his shoon."

This fashion was condemned by the papal bulls, the decrees of councils, and the declamations of the clergy: and yet it prevailed, in some degree, for almost three centuries. At length the parliament of England interdicted, by act of C. D. 1462, prohibiting the use of shoes or boots with pikes exceeding two inches in length, and forbidding all shoemakers to make shoes or boots with longer pikes, under severe penalties. (3 Edw. IV. c. 1.) But even this was not sufficient to put an end to this ridiculous and inconvenient fashion. The civil power called in the aid of the church; and a proclamation was published in all parts of England, denouncing the dreadful sentence of excommunication, besides all other penalties, against all who used shoes or boots with pikes longer than two inches.

CRACKS, in the Hoofs of Horses, or as they are usually termed "sand cracks," are eels or fissures happening to every part of the hoof; though the toe, or the sides of the hoof, are the parts most subject to this malady.

Spits in the hoofs are frequently, especially when their commencement, superficial, not penetrating through the fold of the hoof, in which case, as they do not produce lameness, they are rarely regarded; but at other times, the fissure palls entirely through the hoof, and communicating with the quick, dirt and gravel get into them, and by the contact and friction of these extraneous matters upon the living parts, they produce excreet irritation, pain, and lameness; hence they have been called by Smiths and labourers sand cracks, which convey a false notion, because the quick is no respect the cause of the crack, as the name would imply, but causally occupies it after it has been formed by other means.

Some affect to call those sand-cracks only which happen at the toe or front of the hoof, not extending that application to the cracks which happen to the sides or quarters. As however the distinction appears to be frivolous and without use, we shall consider all cracks of the hoof as of the same nature, producing the same effects, and requiring the same treatment, and not deeming a separate designation, which would only create confused ideas of them, and retard and obscure the progress of the science.

When these cracks have been cut out, and proper precautions have not been used to prevent their recurrence, they return with aggravated effects each time, with greater weakness of the part, and increased difficulty of cure; their depth becomes greater, and the powers of uniting the divided portions of the hoof less, and many confide them almost or quite incurable. In cutting out the crack with the drawing knife, the quick is very subject to get injured by dips of the knife; in this case blood flows and obliterates the crack, and fungous ridings of the quick, pinched by the crack, become troublesome to manage, and create excreet pain and lameness. There is, however, a method of treating these cafes that, without much risk or trouble, ensures their cure, and the restoration of the hoof; and is also recommended by its simplicity, which we shall briefly describe, after first making a few remarks on the nature, appearance, and origin of these cracks of the hoof.

It may be almost ever observed, that the nearer the crack is to the front of the hoof, the more direct and perpendicular its direction, following at the toe the exact direction of the grain or fibre of the hoof; at least, such is their general appearance before they have been disturbed by the knife operator.
The two broken surfaces meet in equal union, whilst those on the quarters or sides of the hoofs, which are generally about the middle or nearer to the heels than this, are irregular in their course, sometimes oblique, transverse, or waving; at other times swelling under in such a way, as to meet the quick at a considerable distance from the external opening, as though the hoof was made of two tables, or limine, which had been separated.

The cause appears to be this, that the horn at the quarters is more flexible than at the toe, and especially when it approaches the heels; and again, these parts lie more immediately under the perpendicular weight of the body than the toe does. If the horn of this part therefore, from any cause, becomes too dry and brittle, it is subject to crack from mere dryness, or to be rent by the weight. &c.: hence we see these kinds of cracks most frequently in blood-horses, whose hoofs are thin and hard, while the other kind of crack, that is, the front crack, is more often seen in cart and heavy draft-horses, to which may also be added, that the fibre of the hoof towards the heels, is in the transverse direction of the piaffe, which is not the case at the toe.

Such things occur, though rarely, as transverse cracks, both in the foot and the sides of the hoof; the growth alone is, however, more apt to remove these, which makes them pass unnoticed, whilst the longitudinal crack will continue to extend itself in spite of the growth.

The strongest hoofs of heavy draft-horses are sometimes split in front, which one should be at a loss to account for from any natural cause. It always almost happens near the middle of the toe, as we have stated, and one should apprehend either that the trimming or drawing did this; or that the hoof unevenly pared, or the fibre unevenly fitted to the wall of the foot, occasioned one-half of the foot to take only a partial bearing upon it, when the violence of the exertion rends the hoof afounder, following the course of the fibre. One cannot so readily conceive, that the violence of the nailing and clinching up the nails could sometimes be the cause of this accident. Drawing the two halves of the hoof in opposite directions, though the strongest are sometimes seen thus divided, yet the weaker, wrinkled, dry, thin, and as the smiths call them, febly hoofs, are most commonly the sufferers from this cause. A clip at the toe, such as is usual in draft-horses, hammered down too violently upon the hoof in front, and this ordinarily is done without any measure or guide in respect to the piaffe, might prejudice and split the hoof in some cases. We have seen the coffin-bone, after death, fairly impregnated with a concave mark, the effect of this prejudice from the clip, and which could not but have been attended with more or less pain, according to the degree of violence that induced it.

A tear on the coronet from the caulking of another horse, or from another foot of the same hoof, by disordering the coronet, would produce a weakness in the horn growing from that part, and induce a sand-crack in any part whatever of the hoof, and is not a very unfrequent occurrence.

There is another and more simple cause of these cracks than any we have yet described, and perhaps it is the more frequent of any, viz. a natural want of moisture or succulence in the hoof; or the same deficiency artificially induced will occasion a small cracking of the external shell or outside of the hoof. A minute and almost imperceptible fissure forms and admits air to the interior of the hoof. This being more succulent in its nature than the external covering, drives, consequentially contracts, and in contracting, extends the crack in both directions. The dryness of the flable, the summer heat, or the winds of March, especially facilitate this process. The cracks successively extend, and, in more or less time, as they are favoured by these circumstances, reach the quick, and the consequences ensue that are above described. The weight and movements of the horse, after a certain time, the hoof becoming too weak to sustain them, compleat the figure.

If the figure at its commencement be low down the hoof, and be retarded in its enlargement by the opposite circumstances to the above, it may be carried out by the ground, and its ful consequence arise from it.

In respect to the cure it is at present usual to cut out these cracks when they occur, and fire them afterwards with a red-hot iron; this certainly makes the hoof together and closes the crack for the time; but it however renders the burnt horn more brittle afterwards, and disposes it more to return if uncovered. The inflammation also in the parts beneath cannot be attended with any beneficial consequences; in such a case they shrink afterwards, and render the cure, on a relapse, much more tedious and difficult, it being for the most part according to the degree of heat employed, attended with a loss of sub stance or absorption proportionate.

The perfect exclusion of the air from the crack is, in ineipient cases, all that is necessary for a perfect reparation of the hoof; that is, the crack, unable under these circumstances to extend itself, grows out therefrom: it is necessary to continue the means till it be near or quite at the bottom of the hoof, with no appearance of its extending upwards. The ointment that we have used with such success in these cases is made of tallow, wax, and tar; to equal parts of the two former ingredients, a sufficiency of tar is added to give it a tenacious consistence; this smeared over the hoof forms a good defence against the air, and is better than oils, which appear to sink in and influence the foot. The ointment well pressed into the crack, or spread on leather or linen, or pledgets of tow, and tied on, is the mode of its application. In other cases, where the application of tis would be inconvenient, or might not be definable on account of the appearance, a very adhesive, tenacious mass to fill up any channel or vacancy in the hoof, is made of equal parts of common turpentine and wax, with a fifth part of tar in colour it; and for dealers or others willing to conceal defects it is particularly useful.

In the simplest occurrence of a crack, we proceed to the treatment of a worse case, where the quick is exposed to the irritation of foreign bodies. Here the crack must be fully exposed with the drawing knife till these particles can be reached and washed out; this should be preceded by washing the wound with mixture of myrrh, and applying a pledge of turpentine, or rather resinous digestive over it for a few days, and continuing to exclude the air as above described till the hoof has grown out entirely, or has formed a strong florot of horn from the coronet that shall remove any suspicions about its future security.

In a very old crack it will be found, that an impression or channel has been made in the coffin-bone itself, as may be observed by macerating the bone after death; and the crack therefore being deeper, is more difficultly got at without wounding the quick on either side. In such case, after rasping the hoof under the coronary ring, as deep as possible without inducing a flow of blood, which in all operations of the hoof should be carefully avoided, as it obliterates the parts to be cut, and makes the process more difficult and uncertain; as the quick on either side is higher than the crack, the rasp can be used to longer, a fine small drawing knife therefore but completes the excision of the shelf. If, however, as is sometimes the case, it be so deep and so surrounded with living parts
parts that it is next to impossible to entirely obliterate it without wounding them by damps of the knife, it is then best to cauce up the lost in the dressings, and wait a week or more, when it will be found that the growth has rendered the perfect excision of the fissional a matter of no great difficulty. A knob of horn from the coronet usually follows this operation, which effectually prevents the return of the crack if kept moist or fineared with the ungunt.

Where the crack, from being of very long standing, has no powers left of union, or when united breaks up again, as when they part in using the horse, it will be necessary to remove the hoof and to a considerable distance from each side the crack, and render it as thin as possible; so that the play of the hoof, that is, the unequal movement of its two portions, shall not interrupt the regular growth of the crack, or break up the growth that is formed entire at the coronet.

In the worst cases that can well occur, as where by firing and other means the parts under the cracks have been much injured, and by bad operating numerous fungues have arisen in the crack, it is preferable to operate in the following way: Clear away the horn to a certain distance on each side of the crack after reducing it as thin as possible with the rasp and drawing knife, pass a scalpel through to the elastic procusses, then with a pincess elevate the slip and draw it off upwards, concluding at the coronet; this being done on either side the crack, the fungues being no longer irritated by the contact of the horn are easily managed, and the growth soon fills up the space with new horn. In lesser cases this, though a certain and ready way, is not advised, being not only extremely painful in itself, but the elastic procusses so disturbed are never afterwards perfectly re-produced. We should leave this account of land-crack very imperfect if we omitted to speak particularly of those funguous elevations of the quick, which to manage are often more troublesome and difficult than the crack itself. Compression in some cases will do, but excision in general is necessary, with compression afterwards; the edges of the horn to, irritating and surrounding them, being carefully removed.

If these fungues are not well reduced and brought to a correspondent flate to the horn growing over them, they do not kindly unite with it, and a diffuse of a moot singular kind is produce, that has high to we apprehend been unnamed or defribed. It is a morbid kind of horn that is produced, and is of a yellower cast than the natural horn, partaking of the structure and appearance very much of the fungues growing from trees or boletus: the natural horn grows over this, preffing it against the quick, occasioning great lamenefs. Tricks by the nails of the foot invading the coffin-bone will occasion also formations of this sort. This rib of bailard horn grows out with the other, widening as it declines, forming a bone whose apex was the original difcafed point. The cure of this, which if not understood, was as the case in our earlier practice, is truly troublesome: nothing less than the total removal of all the horn above and about the morbid rib, and plucking it out entirely will effect the cure, for it returns again and again if the smallest part be left. The horn that first forms after a bad injury of the coffin bone will produce this fort of bailard growth if it is not removed, so that it is necessary to pare away the first growth and keep it from being too rapidly carried down by the growth from the coronet.

In concluding it may not be ufeless advice, also, to forbid the smith's rasping away the external covering or cuticle of the hoof after flooring, which they are very apt to do to give a clean and new appearance to the hoof, thereby removing its natu-
The other is called the sepulchre of his daughter Vendá, who is reported to have drowned herself in the Vistula to avoid marrying a man whom she detested.

Near Cracow are also the remains of an old structure called the palace of Casimir the Great, and the famous salt-mines of Wieliczka. Cooke's Travels. See WIELICZKA.

CRAC, in Ornithology, so called from its cry on the wing, by the French settlers at Martinico. It is the Cncrephagus americanus of Bilston, and the Ardea Cruca of Gmelin, and is found in Chili, and other parts of America, on the banks of sea-rivers. F. Ferréulée describes it as a bird of the size of a well-grown hen, with its plumage much variegated; the crown of the head is ash-blue; the top of its back tawny, and the rump of its upper surface has an agreeable mixture of ash-blue, brown-green, and yellow; the coverts of the wing are partly of dull-green, edged with yellowish, and partly back; the quills are black, fringed with white; the throat and breast are variegated with spots of filem, on a white ground; the legs are of a fine yellow.

CRA, in Ancient Geography, a town of Asia Minor, in Caria. See Steph. Byz.

CRADLE, a well-known machine, in which children are rocked to sleep.

It also denotes that part of the flock of a cross-bow, in which the bullet is put.

CRADLE, in Engraving, is the name of an instrument used in scraping mezzotintes, and preparing the plate. It is formed of steel, resembling a chisel, with one finking file, upon which are cut hollow lines very near each other, and at equal distances. The acting part of this tool is made circular, and the corners are rounded. After being properly tempered, it must be sharpened on the wheelstone. There are various sizes of this instrument.

CRADLE, in Husbandry, a part often added to a leyfield, in order to gather the corn into swathes, when it is mowed.

CRADLE, or Coffer, in Engineering, is the term used for a large wooden trunk, open at top, and with moveable ends, large enough to receive a barge or vessel when floating on a canal, for the purpose of raising or lowering it to a higher or lower pound of the canal, by cranes or other means, without the use of a pound-lock. See CANAL.—This term is also applied to a segment of a hollow cylinder, formed of ribs and lattice, similar to the centering used by bricklayers and masons for turning culverts and arches upon, but made fair or smooth within side instead of without, for supporting and retaining the shape of the inverted arch or lower half of a culvert in soft ground, particularly in quick-fands, and peaty places. A very light cradle of this kind will sometimes prevent the distortion, and ultimate fall, of a round or barrel culvert; and this precaution should never be omitted, in laying culverts under canals or roads in soft ground, where the failing of a culvert may prove of the greatest inconvenience. See CULVERT.

CRADLE, in Ship-building, a frame of timber raised along the outside of a ship, by the bilge, for the more commodious and secure launching of the vessel. The cradle is much used in Italy, Spain, and Turkey; where they also trim great vessels in the cradle.

CRADLE, in Surgery, a caff in which a broken leg is laid, after being set.

CRADOCK, Samuel, in Biography, a learned nonconformist of considerable celebrity in the 17th century. He was educated for the church at Emanuel college, Cambridge, where he took his several degrees, obtained a fellowship, and succeeded to a living in Somersfie. The act of uniformity forced him to relinquish his preference, and

were far less destructive than those which it experienced during the dreadful commotions that agitated Poland in 1570 and 1594, when it underwent repeated sieges, and was alternately in possession of the Russians and of the Confederates. Cracow still exhibits the remains of a magnificent capital in ruins.

The town is surrounded with high walls of brick, strengthened by round and square towers of whifical shapes in the ancient style of fortification, which were built by Venceslaus, king of Bohemia, during the short period in which he reigned over Poland.

Cracow is the fee of a bishop and an university. The latter was founded upon the model of the university of Paris, endowed by Casimir the Great, and improved and completed by Ladislaus Jagellon in 1400. The library is not remarkable either for the number or rarity of the volumes. Among the principal, however, is a Turkish book of no intrinsic value, but esteemed a curiosity on account of its having been found in the fpolts at the battle of Chocznin, and presented to the university by the celebrated John Sobiesky, as a memorial of a victory which saved his country from defection and raised him to the throne of Poland. The most bountiful period of the university of Cracow, was under Sigismund Augustus in the sixteenth century, when several of the German reformers fled from the persecutions of the emperor Charles V., and found an asylum in this city. They gave to the world several versions of the Sacred Writings and other theological publications which diffused the reformed religion over great part of Poland.

In the cathedral of Cracow all the Polish sovereigns, from the time of Ladislaus Loketec, have been interred, except Louis and Ladislaus III. whose bodies were deposited in Hungary; Alexander who was buried at Vilna; Henry of Valois; Augustus III., and the last king. The sepulchres of the kings of Poland are not distingjuished by peculiar magnificence; their figures are carved in marble of no extraordinary workmanship, and some are without inscriptions. When Charles XII. of Sweden was at Cracow he visited these tombs, out of respect to the memory of John Sobiesky, over whose tomb he is reported to have exclaimed: "What a pity that so great a man should ever die!"

The art of printing was first introduced into Poland at Cracow by Haller, and one of the earliest books that issued from his press was, the Constitutions and Statutes compiled by Casimir the Great and augmented by his successors. The characters are Gothic, the fame as were universally used at the invention of printing; the great initial letters are wanting. This publication must have been anterior to 1495, as it does not contain the statutes passed by John Albert in that year.

Towards the southern part of Cracow, near the Vistula, the citadel, surrounded with brick walls and old turrets, forms a conspicuous object on the summit of a rock. This citadel or palace owed its origin to Ladislaus Jagellon, but the greater part was demolished by Charles XII. in 1703, when he entered Cracow in triumph after the battle of Chlów; the remains consist in a few apartments which are left in the same state as they were in the fourteenth century. It was anciently the residence of the Polish monarchs, who from the time of Ladislaus Loketec were all crowned at Cracow, except the last king, whose coronation was solemnized at Warsaw.

On a sandy plain near Cracow are two large barrows. One is by tradition called the burial place of Cracus, duke of Poland, who is supposed to have built the town in 700.
to retire to a small estate in Suffolk, where he preached without any view to emolument, and employed himself in the arduous task of education. He afterwards settled with a congregation in the neighbourhood of Bishop's Stortford, Herts, where he died in the year 1706, being about 86 years of age. He published many works, chiefly on theological subjects, of which the principal were, "A Harmony of the four Evangelists;" "The Apologetic History till the Destruction of Jerusalem;" and "The History of the Old Testament." These were in folio. An "Exposition and Paraphrase of the Revelation" was printed in 1690. His several pieces were highly esteemed in his day, and they exhibit much learning, an accurate acquaintance with the scriptures, and a rational and truly pious Calamy.

CRAEKB, Van Joz, a painter, a native of Bruffels. He was originally a baker, but being upon terms of intimacy with Adria Brauwer, that master taught him the principles of his art, and he commenced painter. Like his master, Craackbeen painted subjects in low life, as the quarrels of drunken men, and frequently represented both his friends and himself with a patch over one eye, making strange distortions of countenance. Though not equal to Brauwer, he is justly considered the best imitator of the style of that extraordinary master. This eccentric artist died in 1641, aged 32. Delcamps, Heinecken.

CRAFT, a sea-term, signifying all manner of lines, nets, hooks, and the like, which serve for fishing. See Fishing.

Hence, as those who use the fishing-trade, use small vessels, such as ketches, hoy, smacks, &c. they call such little vessels "small craft." It denotes also, the boats and vessels used in inland navigation.

Cragus, in Ancient Geography, a town of Asia Minor, in Lycia, situated, according to Strabo, on mount Cragus, which was a craggy rock on the sea-coast of Cilicia. Ptolemy.

Cragus, was also a promontory of Asia Minor, at the extremity of Caria towards Lycia.

CRAIBURG, in Geography, a market-town of Upper Bavaria, on the river Inn, with a castle, in the district of Craiburg.

CRAICHT, a river of Scotland, which runs into the Rhine, opposite to Spire.

CRAIERA, Cravers, a small vessel of lading; as a hoy, or smack. 2 Ric. II. Stat. 14 Car. II. c. 27.

CRAIG, John, in Biography, a learned mathematician, a native of Scotland, and well known for many papers recorded in the Philosophical Transactions, and in the Acta Eruditorum. He had a controversy with Bernoulli, in which Leibnitz took a part, expressing the cauffe of Craig. The paper by which he in most distinguishing is entitled, "Theologie Christianae Principia Mathematica," printed in the Transactions for the year 1699. In this Mr. Craig undertakes to apply mathematical calculations to the credibility of the history of Jesus Christ. His notions are whimsical, as the reader will easily imagine, when he is informed that he attempts to prove. 1. That the certainty of the history of Jesus Christ would have totally ceased with the eighth century, had not it rested on more than the oral testimony of one; 2. That the probability of this history, written by four historians, and propagated by a great many copies of their works, was as strong at the time he composed his paper, (that is, in 1690,) as it would have been in the time of Christ, to a person who had heard it related by the disciples; 3. That the probability of this history, at the end of 3150 years, reckoning from the birth of Christ, will entirely cease, and conseqently that this will be the epoch when the Son of God will come to judge the world, because then there will be no faith on the earth. This work has been republished in Germany and France, but with a view principally of overturning his system. Neither the time of the birth, nor that of the death, of Mr. Craig has been ascertained. Gen. Biog.

CRAIG, William, was born at Glasgow in the year 1709, where he was educated, and became a great proficient in classical learning and in moral philosophy. He studied also with much diligence theology, which he intended to make the business of his life. The first living into which he was inducted was in Clydefdale: this he resigned, on being appointed minister of a church in his native city; and on the death of Potter, the professor of divinity, he was proposed as his successor; but Dr. Leechman being also a candidate, Mr. Craig solicited his own friends to transfer their votes to the doctor, whom he regarded as best qualified for the situation. Mr. Craig continued to exert his talents in the more private line of preacher. He published at different times some singular sermons, "An Essay on the Life of Jesus Christ," and "A Volume of Discourses" in 1775. He lived to the age of 74, was twice married, and about the year 1764 he became a doctor of divinity was conferred upon him. Biog. Brit.

CRAIG-ALVIE, in Geography, a mountain of Scotland, in the S.W. part of the county of Murray, a little N. of the river Spey.

CRAIGAN, a mountain of Scotland, in the county of Perth; 15 miles N.W. of Perth.

CRAIG-BENYON, a mountain of Scotland, in the county of Perth; 3 miles N.E. of Callender.

CRAIG-DARIE, a cape of Scotland, on the E. coast of the county of Kincardine.

CRAIGENDIVE, a small island near the W. coast of Scotland; 4 miles E. from the island of Jura.

CRAIGGAG POINT, a cape of Scotland, on the E. coast of the county of Sutherland; 16 miles N.E. of Dunnet.

CRAIGILLACHY, a solitary mountain in the Highlands of Scotland, that overlooks the entrance to Strathpey, and has for ages past been considered as a kind of rallying point to the clan that inhabit it. On any sudden invasion of the Norwegians on the eastern coast, a fire kindled on some mountain near the sea was instantly seen in Strathpey, and answered by another on Craigillachy, and that again by another on Craigow in Badenoch; so that the intelligence was in this manner often transmitted from the east coast to the west in three hours. By means of this simple telegraph, the whole country was up in an instant to repel invasion. Craigillachy is the war cry of the clan "Grand," and even within these few years, if one of them was borne down or injured in any popular tumult, at a fair or public concourse out of his own country, he cried aloud "Craigillachy," and every peron within hearing, allied by descent or marriage to the clan, flew to his rescue. The motto of the clan is "Stand fast, Craigillachy."

CRAIG-LEITH, a small island of Scotland, in the Frith of Forth, about a mile N. of North Berwick.

CRAIG-LOGAN, a cape of Scotland, on the N.W. extremity of the county of Wigtown; 9 miles N.N.W. of Strathrae.

CRAIGNESS Loch, in Argyleshire, is one of the lakes or inlets of the sea, among the western islands and penin-

fusias of Scotland. It communicates with Loch Crinan, not
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far from the western end of the famous canal of that name. See Canal. It is navigable up to Barbing, and has the town of Craignesh on its N.W. bank.

CRAIGOW, a mountain of Scotland, in the county of Inverness: 18 miles E. of Fort Augustus.

CRAIL, an engine made use of for catching fish. See Cram.

CRAIL, in Geography, a royal borough in the county of Fife, Scotland. Caryle, or Cur-vaile, as it was originally called, is described by ancient historians as a town of considerable importance in the middle of the 9th century. Robert Bruce honoured Craile with a royal charter, which, with several additional grants, was confirmed by Robert II., queen Mary, James VI., and Charles I. Sibbald afferts that David I. died at Craile; but at present there are no other vestiges of antiquity than the ruins of a castle, where David is said to have reigned, and the remains of a priory. The town "is situated on the coast of the Firth of Forth, near Fifenes," and has an incomparable unsafe harbour. This disadvantage might, however, be easily obviated, by converting a neighbouring creek into an excellent receptacle for vessels. The houses form two parallel streets, which extend along the shore; but the former exhibit florid marks of decay, which may be attributed in great measure to the decline of the herring fishery. Population in 1758, 1624.

CRAINEBURG, or KRAINEBURG, or simply Crain, in Latin Cranoburcum, a town of Austria, in Upper Carniola, seated on an eminence on the river San, 30 miles N.W. of Laubach, formerly the residence of the margraves of Crain or Cranburg. It has a citadel named the Kaiserstein, gravel-Rome.

CRAINEBURG, a mountain of Carniola; 6 miles N.W. of Feldes.

CRAINFELD, a small town of the grand duchy of Hesse Darmstadt, on the river Nidda, north of Hanau.

CRAK, a name given, in the time of the Crossades, to Petra, the capital of the Second Arabia.

CRAKANTHORPE, Richard, in Biography, a learned English divine, born at Stockland in Wiltshire, and after having received the usual elementary instructions, he was sent to Queen's College, Oxford, in 1583, and became fellow in 1598. He obtained considerable celebrity for his skill in controversial theology, and was greatly admired as a preacher. He went out, in 1603, as chaplain to an embassy to the emperor of Germany, of which lord Ewes was at the head. Here Mr. Crakanthorp improved every opportunity which his situation afforded, of cultivating an acquaintance with the German literature and scholars. After his return to his native country, he was appointed chaplain to the bishop of London, and also to his majesty, and obtained the living of Black Notley, near Braintree in Essex. He died in 1624, leaving behind him several MSS., some of which were deposited in Queen's College library. He was the author of many works in his own and in the Latin tongues; of which the chief are, "Justification the Emperour defended against Cardinal Baronius!" and a "Defence of Contemniente, with a Treatise on the Pope's Monarchy!" "Logique L'hiu Quinque," &c.; and "Tractatus de Providentia Dei."

CRAKE, or LAND-RAIL, in Ornithology. See Rallus Crae.

CRAKE-berry, in Botany. See Empetrum nigrum.

CRAKENISH POINT, in Geography, a cape of Scotland, on the W. coast of the island of Skye; 6 miles N.N.W. of Dunan point.

CRAJOVAVELIKA, a town of Sclavonia, on an island formed by a small river near the Sava; 52 miles E. of Carlistadt, and 156 S. of Vienna. N. lat 43° 41′. E. long. 16° 27′.

CRAMA, in Metallurgy, a name given by the ancients to braze, made by the mixture of copper and the lapis calaminaris, as at this time. They had also a kind of white brass, made of copper, in use among them, which they esteemed much above the yellow. We find mention of this in Virgil, under the name of albus orichalcum; and the old writers often call it albus crama. We know of many ways of turning copper white; arsenic and many other minerals will do it; and the spoons, and other utensils, which some years ago used to be made of a mixt metal, called al chemotherapy, were a sort of white brass. But it does not appear that any of our methods have been the same with that of the ancients; the copper is rendered more brittle, and in some parts debased, in all our compositions of this kind; but in those of the ancients, it seems to have been rendered more ductile than at first.

CRAMA, CroEMA, and CRAMA, in Medical Writers, are used to signify a mixture of things, whether medicines or chemicals.

CRAMAUD, Simon de, in Biography, a distinguished cardinal, born in Poitou, in France, towards the close of the fourteenth century; of his education we know nothing; but it is certain, that by his industry, learning, and talents, together with the excellence of his character, he raised himself to public notice, and acquired the esteem and confidence of men of the highest rank in life. He was elevated to the first offices both in church and state, till at length he obtained the archiepiscopacy of Rheims, and was created patriarch of Alexandria. In 1413 he was advanced to the dignity of cardinal, an honour conferred upon him for the great services which he performed in bringing to an end the disputes respecting the rival claims of the sovereign pontiffs at Rome and Avignon. He took an active part in deposing Benedict XII. from the papal dignity; and, after he had attempted, in vain, to persuade his holiness to resign his office, and renounce the character of sovereign pontiff, he published a treatise to prove the necessity of withdrawing all obedience from that anti-pope, as he was pleased to style him. On the same subject, he was engaged in missions to England and Spain, in order to conciliate those kingdoms to that plan for restoring the peace of the church. He lived to see the object on which he had laboured with so much assiduity, completely accomplished. Benedict was solemnly deposed by the assemblies in France; and their decree was confirmed by the council of Pisa in 1409, in which cardinal Cramaud was appointed publicly to read their final decree. After this, he survived but a very short time. Moret.

CRAMBA, or CRAMBA, in Ancient Geography, a town of Aelia, in the vicinity of a marble, towards Lydia.


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Cramer, Gabriel, born at Geneva, the 24th of March 1641, was initiated into the practice of medicine by his father. To perfect him further, he went to Strasbourg, where he was created doctor in 1664. He thence returned to Geneva, and rose to be senior, or head of the faculty of medicine there, in which post he died in 1724. His son, Cramer, John, Isaac, who had taken his degree of doctor in 1695, succeeded to his practice, and published an "Epitome of Anatomy," and a "Dissertation on Diseases of the Liver," left by his father. Also, "Theophrastussicereorum curiosorum, in quo curiosi, ad omnes corporis humani tum internos, tum externos morbos curandos, &c. contenuntur." Lon. A. Sib. 1709, 400. He was again succeeded by his son, John Andrew Cramer, who rendered himself famed by his skill in mineralogy and chemistry; and published at Leyden, in 1739, in two volumes Svo. Elementa Artis Dianamicae. It was reprinted in 1744, and again translated into French, in 1753. See CRAMER, John. Hakl. Bib. Med. Elzev. Dec. Hist.

CRAMLOW, in Geography, a town of Poland, in the principality of Cracow, 12 miles N.W. of Cracow.

CRAMP, in Medicine, a painful spasm, or spasmodic contraction of a muscle, or muscular part.

The word cramp is only applied to those spasms or tonic convulsions (see Convulsions) which are confined to one muscle or organ, or to a small number of muscles; as to the muscles forming the calf of the leg, or those of the foot, &c.; or to a painful contraction of the muscular coat of the thorax. The tetanus might be denominated an universal cramp. Cramp in the leg is a frequent occurrence, when the bowels are greatly disordered, as in cholera; and it often attacks elderly people, especially in bed, without any obvious cause. Friction often affords relief; and a moderately tight bandage put on the leg on going to bed, will frequently prevent the occurrence of the spasm. It may be often overcome by a forcible exertion of the antagonist muscles; that is, by attempting forcibly to move the member in the opposite direction to that in which it is spasmodically contracted. Thus, if the muscles of the calf of the leg are affected with cramp, dragging the heel upward, and extending the toes, we should attempt strongly to bring the toes upward, which will tend to stretch the cramped muscles, and thus remove the spasm. Cramp, attacking the stomatch, is to be combated by the internal and external employment of stimulants; internally, by the use of opium, ether, and other antispasmodics; or, if these cannot be immediately procured, by a plentiful draught of hot water, or hot wine, or brandy and water: externally, at the same time, heat may be applied in various ways, as by fomentation, or by means of a hot brick, or of a bladder or bottle filled with hot water. But before these expedients are adopted, it should be well ascertained that the pain is in the stomatch, and that it arises from spasm, and not from inflammation; for, in the latter case, stimulants would prove highly injurious. That the pain is spasmodic only, will be known by the absence of fever, i.e. of a quick sharp pulse, dry tongue, hot skin, thirst, &c. and by its occasional intermission, or change of place. See Stomach, inflammation of; also Gout.

Cramp, from crampe, Fr. a bar of iron or other metal bent at each extremity, which serves to unite and retain in their places blocks or courses of stone in various parts of a building. Cramps are generally employed in works which require great solidity, such as the piers and abutments of bridges, and the voûtes of large arches. They are also used to unite the stones of copings and cornices, and generally any external stone-work which would be liable to injury.
jury from weather, if the joints were not firmly secured. The most secure manner of fixing cramps is to let them into the stone their whole thickness, and rim them with lead; but in light works, and those which are not exposed to the air, such as chimney pieces, it is sufficient to bed them in plaster. The Romans, who were accustomed to use cramps with the greatest profusion in their solid constructions, generally made them of bronze, which is more durable than iron, as it is not subject to be destroyed by rust; modern builders however constantly employ the latter metal.

Cramp fere, or Namf fere, in Ichthyology, the English name of the Torpedo. See RAJA, and TURPIDE.

CRAMP, a piece of iron, bent at each extreme, forming to bind together pieces of wood, stones, or other things. See CRAMP, fere.

CRAMP-IRON were distributed to soldiers destined for an escalade. They were fastened to their shoes with solid straps of leather, in order to fix themselves to the wall of the piece. The name of cramps has also been given to pieces of iron fastened to the extremities or ends of scaling ladders.

CRAMP-RAF, in Ichthyology, the Raja Torpedo; which

CRAMPONEE, in Heraldry. A crest cramponee, is that which at each end has a cramp, or square piece, coming from it.

CRAMPONS, small bars of iron, with four spikes fastened to the shoes of those who traverse the glaciers of Chamouny in Switzerland.

CRAMPONS, CRAMPONS, pieces of iron hooked at the ends: for the drawing or pulling up of timber, stones, &c.

CRANA, in Ancient Geography. A town of the Ilidyonemus, in Arcadia. Theophrastus mentions this place, and says, that its environs abounded with fir-trees.

CRANACH, or CRANACH, Lucas, in Biography, a painter and engraver, born in 1474 at Cranach, a town in the bishopric of Bamberg, in the circle of Welfphalia. His family name is said to have been Sunder, by others Muller. Lucas was instructed by his father in the first principles of painting, and made such progress in the art, that at an early age he was appointed painter to the elector of Saxony. He continued in the service of three succeeding electors, but was particularly attached to John Frederick, surnamed the Magnanimous, who, whilst in captivity, took great pleasure in seeing him paint.

Towards the decline of life, Cranach retired from the court of Saxony, and took up his abode near his friend Luther, at Wittemberg, where he was made burgomaster. His magisterial functions, however, did not prevent his frequently residing at Weimar, in which town he died in the year 1553, leaving a son of the same name, who succeeded him in the situation of burgomaster. Lucas Cranach, the younger, was likewise a painter; but he was still more distinguished as a literary character. He died in 1586, aged 71.

The pictures of Cranach co-filt of historical representations, allegories, and portraits; but his works of the two former kinds, though they excite fertility of invention, and a considerable share of expression, look much of their chief from the by very Gothic and dry style in which they are drawn and executed. His portraits are admired for their great truth of character, and the freshness and beauty of their manners, notwithstanding the incorrectness with which they are drawn, and the entire want of economy in the management of the lights and shadows. In these countries, however, he is well known by his numerous engravings: the greater part of which are executed on wood, though there exist a few by him, very rare, on copper. We shall only mention the following:

On wood.
1. The Passion of our Saviour, 13 pieces, small folio, 1559.
2. Three prints of Tournaments, folio, 1559.
3. Martyrdoms of the Twelve Apostles, 12 Iprited compositions, 4to. 1549.
4. Portrait of Luther, a whole figure, folio.
5. Ditto, Melanchthon, ditto, ditto.

On Copper.
Adam and Eve in the desert. She is sitting at the foot of a rock, the child asleep on her knee. At a distance Adam is represented tilling the earth; in folio, 1509. Very rare.

This artist generally marked his plates with a cypher, composed of the initials of his name, to which he not unfrequently added a dragon, and the arms of Saxony. Hub. Heinecke.

CRANACH, or CRANACH, and Gold Cranach, in Geography, anciently called Crana, a small town of Franconia in the late bishopric of Bamberg, on the river Cranach, 27 miles E. of Cunmbach. It is remarkable for being the place where they held, in ancient times, a bee tribunal, judicium mellicorum.—Also, a river of Franconia, which runs into the Rhine near Cranach.

CRANAE, in Ancient Geography, a small island, in the Lacomian gulf, opposite to Cytheria. It is supposed that Helen gave to Paris the first proofs of affection: and to her ravisher was ascribed the foundations of a temple, built on this continent, and dedicated to Venus Melica: whence the adjacent plain has been called Migniaum. To the west was mount Lamia, consecrated to Bacchus.

CRANAGE, a liberty to use a crane, for drawing up wares out of a ship, or hoy, &c. at a wharf; and to make profit thereof.

The word also signifies the money taken, or paid for the same.

CRANAOS, in Ancient Geography, a town of Africa Minor, in Caria.

CRANBERRY, in Botany. See Vaccinium oxygr

CRANBERRY, in Geography, a thriving town of America, in the state of New Jersey and county of Middlesex, 9 miles E. of Princeton, and 16 S.W. of Brunswick. It contains a handsome Presbyterian church, and a variety of manufactures is carried on by its industrious inhabitants. The stage from New York to Philadelphia passes through Am- bry, this town, and thence to Bordentown.

CRANBERRY ISLANDS lie on the coast of the district of Maine. See MOUNT DESERT ISLAND.

CRANBORNE, a small market-town near the north-east confines of Dorsetshire, England, was famous in the Saxon and Norman times for its monastery, church, and lords. About the middle of the tenth century, the manor belonged to a noble family, named Hayward de Meun, from his pale or fair complexion. His grandson, Britricius, was sent ambassador into Norway, where, refusing to marry Mathilda, afterwards queen to William the Conqueror, she was so provoked at this affront, that when her husband came to the crown of England, he procured an order to seize Britricius at his manor or castle, at Stanley in Worcester.
There are several improvements of this useful machine mentioned in Desaguliers's Experiments. Philos. p. 178; for particularly how to prevent the inconveniences arising from sudden jerks, as well as to increase its force by using a double axis in peristichio, and two handles.

The crane is of two kinds; in the first kind, called the rat-tailed crane, the whole machine, with the load, turns upon a strong axis; in the second kind, the gibbet alone moves on its axis. We shall refer to Desaguliers, ubi supra, for a particular account of different cranes, and recent improvements in the construction of them: beginning with a description of one, in which most of them are combined, invented by the late Mr. Padmore of Brick. This consists of wheels, axles, pulleys, ropes, and a gib or gibbet. Plate XVII, Mechanics, fig. 2. When the rope, H, is hooked to the weight K, a man turns the winch A, on the axis of which is the trundle B, which turns the wheel C, on whose axis, D, is the trundle E, which turns the wheel F, with its upright axis G, on which the great rope, H H, winds as the wheel turns; and going over a pulley, I, at the end of the arm, d, of the gib c e d e, it draws up the heavy burden K; which, being raised to a proper height, as from a flup to the quay, is then brought over the quay by pulling the wheel, Z, round by the handles z, z, which turns the gib by means of the half wheel, b, fixed on the gib-post e e, and the stronger pinion, a, fixed on the axis of the wheel Z. This wheel gives the man that turns it an absolute command over the gib, so as to prevent it from taking any unaccustomed swing, such as often happens when it is only guided by a rope tied to its arm d; and people are frequently hurt, sometimes killed, by such accidents.

The great rope goes between two upright rollers i and k, which turn upon gudgeons in the fixed beams f and g; and as the gib is turned towards either side, the rope bends upon the rollers next that side. Were it not for these rollers, the gib would be quite unmanageable; for the moment it were turned ever so little towards any side, the weight, K, would begin to descend, because the rope would be shortened between the pulley I, and axis G; and so the gib would be pulled violently to that side, and either be broke to pieces, or break every thing that came in its way. These rollers must be placed so, that the files of them, round which the rope bends, may keep the middle of the bended part directly even with the centre of the hole in which the upper gudgeon of the gib turns in the beam f. The truer these rollers are placed, the easier the gib is managed, and the less apt to swing either way by the force of the weight K.

A ratchet-wheel, Q, is fixed upon the axis D, near the trundle E; and into this wheel falls the catch or click R. This hinders the machine from running back by the weight of the burden K, if the man who raises it should happen to be careless, and so leave off working at the winch, A, sooner than he ought to do.

When the burden, K, is raised to its proper height from the flup, and brought over the quay by turning the gib about, it is let down gently upon the quay, or into a cart standing thereon, in the following manner. A man takes hold of the rope t t, (which goes over the pulley w, and is tied to a hook at S, in the catch R,) and so disengages the catch from the ratchet wheel Q; and then, the man at the winch, A, turns it back, and lets down the weight K. But if the weight pulls too hard against this man, another lays hold of the handle V, and by pulling it downward, draws the gripe, U, close to the wheel Y, which, by rubbing hard against the gripe, hinders the too quick descent of the weight; and not only so, but even stops it at any time, if
CRANE.

if required. By this means, heavy goods may be either raised or let down at pleasure, without any danger of hurting the men who work the engine.

When part of the goods is craned up, and the rope is to be let down for more, the catch, R, is first disengaged from the ratchet-wheel, Q, by pulling the cord s; then the handle, q, is turned half round backward, which, by the crank, n, in the piece a, pulls down the frame, b, between the guides m and n, (in which it slides in a groove) and so disengages the cradle, B, from the wheel C; and then, the heavy hook, s, at the end of the rope, H, descends by its own weight, and turns back the great wheel, F, with its cradles, E, and the wheel C; and this last wheel acts like a fly against the wheel, F, and hook s; and so prevents it from going down too quick: whilst the weight, X, keeps up the gripe, U, from rubbing against the wheel Y, by means of a cord going from the weight, over the pulley, w, to the hook, W, in the gripe: so that the rope never touches the wheel, unless he be turned down by the handle V.

When the crane is to be let at work again, for drawing up another burden, the handle, q, is turned half round forwards; which, by the crank, n, raises up the frame, b, and causes the cradle, B, to lay hold of the wheel C; and then, by turning the winch A, the burden of goods, K, is drawn up as before.

The crane, n, s, turns pretty stiff in the mortar near a, and stops against the farther end of it when it has got just a little beyond the perpendicular; so that it cannot come back of itself: and therefore, the cradle, B, can never come away from the wheel C, until the handle, q, be turned half round backward.

The great rope runs upon rollers in the lever L M, which keep it from binding between the axle at G and the pulley I. This lever turns upon the axis, N, by means of the weight O, which is just sufficient to keep its end, L, up to the rope; so that, as the great axle turns, and the rope coils round it, the lever rifes with the rope, and prevents the collars from going over one another.

The power of this crane may be estimated thus: suppose the cradle, B, to have 13 flaves or rounds, and the wheel, C, to have 76 spur cogs; the cradle, E, to have 14 flaves, and the wheel, F, 56 cogs. Then, by multiplying the flaves of the flavles, 13 and 14, into one another, their product will be 182; and by multiplying the cogs of the wheels, 78 and 56, into one another, their product will be 4368, and dividing 4368 by 182, the quotient will be 24; which shows that the winch, A, makes 24 turns for one turn of the wheel, F, and its axle, G, on which the great rope or chain, H I H, winds. So that, if the length or radius of the winch, A, were only equal to half the diameter of the great axle, G, added to half the thickness of the rope H I, the power of the crane would be as 24 to 1: but the radius of the winch being double the above length, it doubles the said power, and so makes it as 48 to 1: in which case, a man may raise 48 times as much weight by this engine as he could do by his natural strength without it, making proper allowance for the friction of the working parts. Two men may work at once, by having another winch on the opposite end of the axis of the cradle under B; and this would make the power double.

If this power be thought greater than what may be generally wanted, the wheels may be made with fewer cogs in proportion to the flaves in the cradles; and so the power may be of any degree that is judged to be requisite. But if the weight be so great as will require yet more power to raise it (suppose a double quantity), then the rope, F I, may be put under a moveable pulley y, as d, and the end of it tied to a hook in the gib at t; which will give a double power to the machine, and so raise a double weight hooked to the block of the moveable pulley.

When only small burdens are to be raised, this may be quickly done by men pulling the axle, G, round by the handpikes, y, y, y; having first disengaged the cradle, B, from the wheel C: and then, this wheel will only act as a fly upon the wheel F; and the catch, R, will prevent its running back, if the men should inadvertently leave off pulling before the burden be unhocked from B.

Lately, when very heavy burdens are to be raised, which might endanger the breaking of the cogs in the wheel F; their force against these cogs may be much abated by men pulling round the handpikes, y, y, y, whilst the man at A turns the winch. Ferguson's Lectures on Select Subjects, 4th, p. 32, &c.

If the axis, G G, be placed horizontally, and instead of the wheel, F, a larger wheel be fixed to it, which may be turned by men walking in it, we shall have another kind of crane: the rope will be pulled round the axle, and the ibib work is the same as in the other kind of crane. Mr. Padmore contrived to prevent the danger attending the use of this contrivance, by putting coggs all round the outside of the wheel, and applying a trundle to turn it; by which addition the power is increased in the proportion of the number of cogs to the number of flaves in the cradle, and in order to hinder its running back by the force of the weight, should the men within it, or leave off walking, he added a ratchet-wheel to the axis of the trundle, like that already described. Two winches may also be fixed to the ends of the axle, by working which the men in the wheel would be much assisted. On the axle of the trundle he likewise fixed a gripe-wheel, such as has been already described, by means of which heavy burdens may be let down without the least danger.

Mr. Ferguson has contrived and described a new and safe crane, with four different powers adapted to different weights; for which he received a reward of 50l. from the Society for the encouragement of arts, &c. In this crane (see Plate XVIII. Mechanics, fe. 3.) A represents the great wheel, and B its axle, on which the rope, C, winds. This rope goes over a pulley, D, in the end of the arm of the gib E, and draws up the weight F, as the winch, G, is turned round. H is the largest trundle, I the next, and K is the axis of the smallest trundle which is supposed to be hid from view by the upright supporter L. A trundle, M, is turned by the great wheel, and on the axis of this trundle is fixed the ratchet-wheel, N, into the teeth of which the catch, O, falls. P is the lever, from which goes a rope, Q Q, over a pulley, R, to the catch; one end of the rope being fixed to the lever, and the other end to the catch. S is a clatch bar of wood, one end of which is screwed to the floor: and, from the other end goes a rope (out of sight in the figure) to the farther end of the lever, beyond the pin or axis on which it turns in the upright supporter T. The use of this bar is to keep up the lever from rubbing against the edge of the wheel U; and to let the catch keep in the teeth of the ratchet-wheel; but a weight hung to the farther end of the lever, would do full as well as the clatch bar and rope.

When the lever is pulled down, it lifting the catch out of the ratchet-wheel, by means of the rope Q Q, and gives the weight, F, liberty to descend: but if the lever, P, be pulled a little farther down than what is sufficient to lift the catch, O, out of the ratchet-wheel, N, it will rub against the edge of the wheel, U, and thereby hinder the too quick descent of the weight; and will quite stop the weight, if pulled hard. And if the man who pulls the lever should happen inadvertentl
vertently to let it go; the elastic bar will suddenly pull it up, and the catch will fall down and stop the machine.

W, W, are two upright rollers, above the axis or upper gudgeon of the gib E: their use is to let the rope, C, bend upon them, as the gib is turned to either side, in order to bring the weight over the place where it is intended to be let down: which rollers ought to be so placed, that if the rope, C, be stretched close by their outward edges, the half thickness of the rope may be perpendicularly over the centre of the upper gudgeon of the gib; for then the length of the rope between the pulley in the gib and the axle of the great wheel, will be always the same, in all positions of the gib, and the gib will remain in any position to which it is turned.

The powers of this machine may be easily calculated: the horizontal-wheel has ninety fix coffs, the largest trundle twenty-four wheels, the next largest has twelve, and the smallest has six. So that the largest trundle makes four revolutions for one revolution of the wheel; the next makes eight, and the smallest makes sixteen. When a wheel is occasionally put upon the axis of either of these trundles for turning it, the handle of the wheel describes a circle in every revolution equal to twice the circumference of the axle of the wheel; and therefore the length of the wheel doubles the power gained by each trundle. So that if the winch be applied to the axle of the largest trundle and turned four times round, the wheel and axle will be turned once round, and the power will move through eight times as much space as the weight rises through: in which case the power will be to the weight as eight to one; i.e. a man may raise (allowing for friction) eight times as much weight by the crane, as he might by his natural strength without it. If the second trundle be used, the proportion of the power to the weight will be as sixteen to one; and with the smallest trundle, as thirty-two to one. The power may again be doubled by drawing up the weight by one of the parts of a double rope, going under a pulley in the moveable block, which is hooked to the weight below the arm of the gib; for then the power will be as sixty-four to one: and by increasing the number of pulleys, the power will be proportionably increased. See Supplement to Ferguson's Lectures, p. 31, &c. or Phil. Trans., vol. liv. art. 3, p. 24.

An improved crane for wharfs has lately been invented by Mr. Robert Hall of Bastedor, near Nottingham, who was rewarded with 40 guineas by the Society of Arts. The invention chiefly consists in expanding a set of bars parallel to the axis of a crane, by means of which the velocity of the ropes in raising weights may be diminished or increased, in proportion to the load which is to be raised. An engraving and description of this crane may be seen in the 12th volume of the Transactions of the Society, p. 283, &c. We have already observed under the article CAPSTAN, that the capstan with a compound barrel, consisting of two cylinders of different radii, may be converted into a crane or windlass for raising weights. Such a crane is evidently superior to those in common use, with the additional advantage of allowing the weight to stop in any part of its progress, without the aid of a ratchet-wheel and catch, as the two parts of the rope pull on contrary sides of the barrel. The rope, indeed, which constitutes the larger part of the barrel, acts with a longer lever, and consequently with greater force than the other; but as this excess of force is not sufficient to overcome the friction of the gudgeons, the weight remains stationary in any part of its path. A crane of this kind was erected, in 1797, at Berderton in New Jersey, by Mr. M'Kean, for the purpose of raising logs of wood to the frame of a saw-mill, 10 feet distant from the ground.

We are happy here to lay before the public a design for a crane, by the late Mr. John Smeaton, through the liberality of Sir Joseph Banks, who kindly permitted our draughtsman to make a reduced copy of the original drawing, which he purchased, with many others, since the demise of Mr. Smeaton. The machine was erected at the wool quay custom-house, London, in 1789. Fig. 2. (Plate XIX. Mechanies) is a plan of it; fig. 3, an elevation; and fig. 1, a section of the barrel: the same letters of reference are used in each figure.

A is the barrel upon which the chain is wound; it has seven turns of a spiral groove cut upon it, to receive the lower half of the links of the chain. As will be clearly understood from fig. 3; a, a. fig. 2, are two of four handles (the others not being shown) screwed to the end of the barrel by long bolts going through its whole length, as shewn in fig. 1; the other ends of the same bolts attach to the barrel, a wheel, B, with hooked teeth. The barrel, with its wheel, B, and handles, has a metal bush driven into its centre, and well the driving nicely turned arbor, b, in the section, fig. 1, which the barrel, B, is to turn upon itself, freely without thakle. This arbor has a shoulder, C, upon it truly turned, against which the great wheel, D, rests, and is held fast to it by four screws (fig. 2.) the great wheel, D, and barrel are connected together by means of two cks., d. d. (fig. 3.) turning on pins made fast to the wheel, and projected by lugs into the teeth of the ratchet-wheel B. The great wheel, D, has 36 teeth, and is turned by a lantern, E. of 11 wheels, on the arbor f. F is a fly-wheel fitted on the same arbor by a shank, in the same manner as the great wheel. G is a broad wooden wheel on the arbor, f, encompassed half round by a brake, a. formed of four pieces; it is brought to touch the wheel by a foot lever, H, fig. 3. and a weight at the opposite end of the lever lifts it off the wheel when not in use. I is a ratchet-wheel, and j the click to prevent the crane running back; K, K, are the winches by which it is turned. The ratchet and click on the barrel are used when the crane is lowering goods, and the chain is to be drawn up with any work; the workmen then turn the barrel by the four handspikes, a. a. The contrivance of the grooved barrel is of very great use, as without it the chain lies in such a manner that the action of the load tends to twist open the links laterally. Mr. Gilbert Gilpin of Shalford was rewarded by the Society of Arts, in 1803, for the same invention, without perhaps knowing Mr. Smeaton had applied it before him. As he has very well explained the advantages of this construction, we shall make use of his own words from the Transactions of the Society, vol. ii. p. 3.

Every chain formed of oval links has a twist in itself, arising from a depression given by the hammer to each link in the weld; the twist may be seen by holding the piece of the chain by one end, and viewing the links edgeways as it hangs down; and this circumstance, so trifling in appearance, is not so in its effects; and it has in consequence a perpetual tendency (even when reeled perfectly straight in pulleys, and on the barrels of cranes) to assume a spiral form, which a plain cylindrical barrel, and the common pulleys with semi-circular grooves, are not in the least calculated to prevent. Hence the arcuate links of the chain, in coiling round a barrel,
barrel, or working over pulleys, form obtuse angles in affuming the spiral form, bearing upon the lower parts of their circumferences, and forming as it were two levers, which wrench open and crush each other in proportion to the weight suspended, as well as prevent the freedom of motion in the links themselves, and thereby load the chain with additional friction.

A still greater obftruction to the uniformity of its motion, is the tendency which the chain has to make a double coil, as it approaches the middle of the barrel, and crosses its center, and that of the pulleys at right angles, by means of which the chain is frequently broken by the sudden jerk, caused by the upper coil slipping off the undercoat.

It is to these caufes that all the accidents that occur to workmen and machinery, from the failure of chains, may be attributed, (bad iron excepted,) and which form the foil objection to their becoming a general substitute for ropes.

As a preventive to these evils, says this writer, I have grooves cast in iron pulleys, of sufficient dimensions to receive the lower circumferences of the links of the chain, which work vertically: those which work horizontally form the guide part of the chain (if we may be allowed the expression,) bearing up on each side of the grooves.

The barrels are also of cast iron, with spiral grooves of the fame dimensions, at such distance from each other as to admit the chain to bed without the danger of a double coil; by these means the links are retained at right angles with each other, the only position for free and uniform motion.

The links of the chains are made as short as possible, for the purpose of increasing the flexibility, and they are reeded perfectly free from twist in the pulleys and on the barrels, for the fame reafon.

When applied in block, the grooves in the pulleys prevent the different falls of the chain from coming in contact, and render plates between them (as in the common way) totally unnecessary; the pulleys are in confquence brought clofer together, the angle of the fall from block to block considerably diminished, and the friction against the plates entirely avoided. Brain guards, with grooves opposite to those in the pulleys, are riveted to the blocks, to prevent the chain getting out of its birth from any accidental circumstance.

This mode of working chains I first put in practice for Melia's, T. W. and B. Boshield, at their works, in July 1803; and it is applied in the working of cranes capable of suspending from ten to fifteen tons; in the working of the governor balls of steam engines confructed by Melia, Boulton and Watt, and in the raising of coal and ore from the mines, for which purposes ropes had been solely used at this manufactory. In all cafes it has performed with the utmost safety, uniformity, and flexibility; so much so, that the prejudices of our workmen against chains are entirely done away, and they hold the heaviest articles with more ease, and as great confidence of safety, as they would with the belt ropes.

The same method is applicable, at a trifling expeure, to all machines at present worked by ropes, or by chains, in the usual way: and all the common chains now in use, may be applied to it with equal facility.

With a view of ascertaining the relative flexibility of ropes and chains, I wedged an iron pulley, thirty-one and a half inches in diameter, on the spindle of the pinion of a crane of the following description, viz.

Barrel, 30 inches diameter.
Wheel, 64 teeth.
Pinion, 8 ditto.
Top block, with three pulleys of 12 inches diameter.
Bottom block, with 2 ditto. ditto.

To the large pulley I attached a small rope, for the purpose of suspending the weights in the hoisting of the different loads, and the results were as follow:

<table>
<thead>
<tr>
<th>The crane was loaded with,</th>
<th>Tack to hold the loads when reeded with the chain in grooved pulleys.</th>
<th>Ditto, when reeded with a half-worn tared strand-laid rope 3¼ inches in circumference.</th>
<th>Ditto, when reeded with the chain promiscuously, as in the common way.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lbs.</td>
<td>lbs.</td>
<td>lbs.</td>
</tr>
<tr>
<td>First,</td>
<td>-</td>
<td>2320</td>
<td>63</td>
</tr>
<tr>
<td>Second,</td>
<td>-</td>
<td>1000</td>
<td>32</td>
</tr>
<tr>
<td>Third,</td>
<td>-</td>
<td>500</td>
<td>17</td>
</tr>
<tr>
<td>Total 3500</td>
<td>112</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The flexibility is inversely as these moments, and proves the superiority of chains: for (on the average of the trials with the chain in the grooves; 

One pound raised - - - 31.25 lbs.
With a half-worn strand-laid rope, three inches and a half in circumference - - 26.11 ditto.
And with the chain in the usual way, only - - - 24.47 ditto.

It also appears (contrary to the general opinion,) that chains are safer than ropes; for it is an established axiom, that those bodies whose fibres are most in the direction of the strain, are the least liable to be pulled asunder; and in our examination of the properties of a rope, we find that the strands cross the direction of the strain in undulated lines, and consequently prevent its uniform action thereon. A rope is subject to this inconvenience even when stretched in a direct line, but more particularly so when bent over a pulley, as in that position the upper section moving through a greater space than the under one, is acted upon by the whole strain; and hence the frequent breaking of ropes in bending over pulleys, from the double strain overloading the strands of which the upper section is formed.

The links of a chain are subject to the transverse strain, where they move in contact; but as such strain is in proportion to the length of the bearings, it must be very trifling. All the links having axes of their own, the chain moves simultaneously with the strain, and both are in consequence retained in continual equilibrium. A chain in grooves will therefore sustain as great a weight when bent over
CRANE.

over a pulley, as it will in a direct line, and consequently is safer than a rope.

The Society for the encouragement of arts, manufactures, and commerce, having for many years past offered premiums for improvements in cranes, have therefore a large collection of models of different sorts. We have selected 3 of these, and have appropriated Plate XX. Mechanics, to the explanation of them. Figs. 1 and 2, are two elevations of a walking wheel crane laid before them by Mr. James White of Cheamington, Kent, and for which he received a premium of 20 guineas in the year 1796. We have found it necessary to have new drawings made of this machine, as those published by the learned society are taken from the model left with them, and do not explain the manner in which the machine should be constructed.

Figs. 1 and 2, are two elevations of it at right angles to each other. A A is a large wheel, about 16 feet diameter, strongly framed and secured to its axis E, which is mounted upon pivots at its ends and inclined to the horizon in an angle of about 70 degrees, and consequently the plane of the wheel inclines 20 degrees. The rope of the crane is coiled round the axle and palies over a pulley a, (fig. 1,) to the gib of the crane, which is constructed in the usual method; F is a lever extending across the wheel and fixed at one end into an upright axis; G H is a flint lever connected with an iron rod e, with a gripe g, which embraces part of the circumference of the wheel and prevents its turning, unless removed by pulling the lever F; h (fig. 1,) is a cord fastened to the gripe lever, and going over a pulley in the floor, having a weight suspended from it; this always gives the gripe a tendency to drop the wheel, and by the weight coming up to the pulley stops the gripe lever from going too far, when pressed by a man walking on the wheel. The wheel is turned by a man walking on the wheel and pulling the gripe lever F, so as to release the wheel which then turns (if the load be not too great) both by his weight and muscular exertion applied against the gripe lever.

The wheel is supposed to be erected in a warehouse, and an opening is made in the floor to allow the wheel to pass through. The man walks from the floor at k, up the wheel, which will always be at rest, unless he removes it by pulling the lever F. The end, l, of the gripe is jointed to a stout upright beam going from the floor to the ceiling of the room where the crane is erected, and the end of the gripe should be hung by small cords from the ceiling to prevent its falling down and getting from its work.

The properties of this crane are as follow: its simplicity consisting of a mere wheel and axle. Secondly, it's only friction, exclusive of the pulleys, is that on the two gudgeons of the shaft; and one of these supports the weight of the wheel, and the other that works it, nearly in the direction of its point. Thirdly, it is durable, as is evident from the two properties above-mentioned. Fourthly, it is safe, for it cannot move but during the pleasure of the man, and while he is actually pressing on the gripe-lever. Fifthly, this crane admits of an almost infinite variety of different powers; and this variation is obtained without the least alteration of any part of the machine. If, in unloading a vessel, there should be found goods of every weight, from a few hundreds to a ton and upwards, the man that does the work will be able so to adapt his strength to each as to raise it in a space of time proportionate to its weight, he walking always with the same velocity as nature and his greatest ease may teach him. It is a great disadvantage in some cranes, that the smallest weight must be as long in raising as the largest, unless the man turn or walk with a great velocity, which tires him in still greater proportion.

In other cranes, perhaps, two or three different powers may be procured; to obtain which, some pinion must be shifted, or fresh handle, applied or refixed to. In this crane, on the contrary, if the labourer finds his load too heavy as to permit him to ascend the wheel without its turning, let him only move a step or two toward the circumference, and he will be fully equal to the task. Again, if the load be too light, as scarcely to resist the action of his feet, and thus oblige him to run through so much space, as to tire him beyond necessity, let him move laterally towards the centre, and he will soon feel the place where his strength will suffer the least fatigue, by raising the load in question.

It has been before observed, that, if left alone, this crane will naturally reduce itself to a state of rest, even though a weight were suspended to it. The means will appear to be the gripe, or brake at the top, and its lever, which stretches across the diameter of the wheel, at the height of a man's breast, when in an attitude of treading the wheel to the belt advantage.

The next crane of the Society's which we shall describe, is one for which Mr. John Braithwaite received their gold medal. The description published in the third volume of their Transactions, is as follows.

The frame, which is chiefly of cast-iron, is formed of two circles, held together by three fire-wood bars, and standing on four feet; the crane wheel, which is inclosed within the frame, consists of three concentric toothed face-wheels, joined together by strong bars, whose axle is the barrel, on which the rope is cocked; in the front of the face-wheels runs a lifting arbor; on this arbor is a pinion, which may be brought to work in the teeth of either of the face-wheels, and thereby the power employed at the winch may be applied to raise a greater or lighter weight occasionally. A B C D E. Figs. 3 and 4, is a frame of cast-iron; F, G, H, three concentric face-wheels, united together by the eight straight bars, a a, a a; 1 K a lifting arbor, on which is fixed a pinion J; M the winch or handle; N a flop, which, when lifted up, permits the lifting arbor to be moved backward or forward; but, when down, retains it in its proper place; O a pail, or flop, which prevents the crane running back, but may be discharged at pleasure; P the barrel on which the rope is coiled.

We think a great improvement might be made in this machine, by putting on the arbor, I K, three pinions, one for each wheel; they should all be put loose upon the arbor, but either of them may be easily fixed to turn with it by a sliding coupling iron; which will only admit of one being engaged at a time. The wheels might then be bevelled, which are found, by experience, to work better than the face-wheels; and the lifting of the arbor obliges it to be of greater length than necessary, and more liable to be strained or bent; we have seen such a contrivance in other machines which acted very well.

Fig. 5, is a contrivance of Mr. Joseph Dixon, for which the Society presented him with 15 guineas in 1795, which he calls a preservative-wheel; it is intended to be applied within the fire of an ordinary vertical wheel, where the men walk in the infide, to prevent the danger to which they are continually exposed, by the load being too great for them; the wheel then runs back, and throws them about in the wheel, and frequently kills them. A E is the axis, or spindle of the walking-wheel; the arms are mortised into it at a a; E is the part where the crane rope winds; B, B, are two wheels fixed on the axis, and having at their peripheries fix pulleys, over...
over which ropes run, that are fastened at their extremities to two segments of circles C, C; these are united together by a wooden bar D, which the men are to lay hold of and suspend themselves by in case of danger.

This machine would completely obviate the danger to which the men who work in these wheels are exposed, but it would, at the same time, increase the danger to those employed in other parts, as the men within the wheel would, by hanging themselves to the bar D, remove all obstructions to the wheel's motion, and, without some other contrivance of a brake-lever, the wheel would run down so rapidly by the action of the load as to expel those at the gib, and other parts, to great danger.

Mr. Ferguson contrived a crane (already described) to remove the fame defect, where the walking-wheel had a ring of cogs round its outside, working into a pinion, on whose axis was a brake and ratchet-wheel, with a winch at the end for the man who managed the brake to pull occasionally in raising the load. But the rapid motion of the circumference of these large wheels, renders this contrivance inapplicable, unless a smaller cog-wheel was fixed upon the fame axis with the walking-wheel.

Fig. 1, of Plate XXI, is a gib for a crane invented by Mr. Bramah, and described by him in Nichol's Journal, 1800, vol. VIII. p. 99. The support for the gib is a hollow pipe or column, A, firmly fixed by a square flange, bolted to beams in the ground, and the rope for the crane passes through this pillar. The gib of the crane has two sockets, a, a, fitting to the pillar, so that it can turn all round. A pulley, d, is fixed on the back of the gib and its edge hangs just over the centre of the column; e is the pulley at the end of the gib. The crane rope, after going over the pulleys b, d, passes down the column, and goes round another pulley, to convey it to the crane-work, which may be of any of the kinds we have described.

Fig. 2, is a very good kind of crane, as it requires no framing over it; it turns round upon a strong vertical beam, A B, moving between rollers fixed in the floor of the wharf at B, and going down below that 12 or 14 feet, where it works on a pivot. The beams of the gib are mortised into the beam A B; the wheels are mounted in a frame formed by two iron croffes bolted to the beam, one on each side; the barrel is one foot diameter; the great wheel has 100 teeth, and is four feet diameter; the small wheel has 51 teeth; and the least pinion seven leaves. The winches can be applied to any of the wheels for different powers, when it is used on the barrel, or second wheel; the others are put out of gear by sliding their spindles endways. The barrel and pulleys should always be grooved, as in Mr. Smeaton's crane, where chains are used, though this is not sufficiently attended to by Mechanics.

Fig. 3, represents the tongs by which logs of timber are taken up with a crane, and the greater weight they bear the better they hold. Figs. 4 and 5, are two elevations of a crane by Mr. Valentine Gottlieb of Lambeth Marsh, London. The barrel, A, has a wheel fixed to it at each end; one, a, has 96 teeth, the other, b, an arbor with two pinions on it of eight teeth for the wheel 96, and another of 14, for the wheel 90; these pinions are at a smaller distance apart than the arbor wheel, and so they can not be both engaged to the wheel at once, and by sliding it an end either wheel and pinion may be used for different work; f; f are two stops to hold it in either one; b is a fly on the same arbor b, and c the handle. The original part of the crane is the gib; it is a large beam, H, placed hori-

zontally, and running upon a roller at A, and its other end kept down by another at J; it has a pulley at its outer end, over which the ropes pass. The under side of the beam is cut into teeth, forming a rack, and a pinion of eight leaves, on the frame arbor as the wheel m; moves the beam, so as to bring the goods supported from its end into the house. If the wall of the warehouse, and the wheels are supponed to be placed in the roof. The wheel m and the fly wheel, have endless ropes going round them to work the crane by, in the room below, if necessary.

CRANE, in Ornithology, the Ardea rufus of Linnaeus and Gmelin. For an account of the birds that are referred to this class or division in the arrangement of Gmelin; see Gruel. For other species of the Ardea, see Ciconia and Stork, Cristate, and Herons.

CRANE'S bill, a kind of forceps used by surgeons, and is named from its figure.

CRANE'S bill, in Botany. See Erodium, Geranium, Pelargonium.

CRANE-fly, a name given by some to the creature we commonly call fuller long-legs; and the authors of histories of insects, Tityus terrestris. This creature affords the microscopic observer many curious particulars; but the most remarkable is, the surpassing contraction of the muscular fibres in the legs. These being dissected in a drop of water, and placed before the microscope, the fleshy fibres contract and unfold themselves in a manner not to be imagined, and continue this motion for several minutes; and this is constantly to be observed in this insect, and never in any other, so far as has been yet observed. Leeuwenhoeck, Arcan. Nat. tom. iii. p. 109.

The intestines of this creature are also very wonderful, consisting of numberless vessels and organs, which may be seen as plainly by the microscope, as the bowels of larger animals can by the naked eye. The tails both of the male and female are also of an amazing structure; the male's ends in a sharp point, with which he perforates the ground, and deposits her eggs under the grass in meadows.

CRANE linas, in a ship, are lines going from the upper end of the sprit-tail-top-mast, to the middle of the foremast, serving to keep the sprit-tail-top-mast upright and steady.

CRANE-neck of a carriage. See Coach.

CRANENBOURG, in Geography, a small town of France, in the department of the Roer, chief place of a canton in the district of Cleves. It has only 955 inhabitants. The canton itself contains fifteen communes, with a population of 4041 individuals. The town formerly belonged to the Prussian duchy of Cleves in Westphalia, which at present forms part of the department of the Roer.

CRANEQUINNERS, or CRANEQUEIVERS, in Military Language. Before the invention of gunpowder this name was given to soldiers who were armed with bows, and made use of an instrument called Cranequin for bending them. The chukas de Bourgoynech[a] usually used hundred cranequiner in their fate.

CRANEY, in Geography, a small island on the S. side of James river, in Virginia, at the mouth of Elizabeth river, and 5 miles S.W. of Fort George, on Point Comfort. It commands the entrance of both rivers.

CRANFIELD, a rectory in Bedfordshire, in the Hundred of Redbournbrooke: this village is situated upon sand clay land, and is remarkable for the deep and narrow state of its roads, although its situation is high: the spire on its top is a very commanding object, whose place was determined by the government trigonometrical survey in 1799, by an observation from Bowbrick-hill station, dif-
tint 29, 599 feet, and bearing 30° 44′ 22″ S. W. from the parallel to the meridian of Greenwich, and another from the Liddington-park station, distant 19576 feet, whence is deduced its parallel 52° 4′ 3″ N. and its longitude of 3° 56′ 11″ 1′, or 24° 27′ W. of Greenwich.

CRANFIELD-point is the N. point of the entrance into Carlsgford bay on the east coast of Ireland. N. lat. 54° W. long. 6° 3′ 30″.

CRANGANORE, a town of India, in the country of Cochin, on the coast of Malabar, with an irregular fortress built by the Portuguese, from whom it was taken by the Dutch in 1662; the Dutch sold it in 1789 to the rajah of Travancore; which caused a war between the English and Tippoo Sultan, King of the Myore, who disputed the right of the Dutch to dispose of it. It was taken by Hyder Ali and restored by the English in 1790. N. lat. 10° 21′; E. long. 75° 58′.

CRANGEN, a small town of Prussia, in Utterian Pomerania, with a castle, situated on the river Grabow.

CRANGON, in Entomology. See Cancer Aethus.

CRANIA, in Ancient Geography, a mountain of Greece, in Etolia, near the city of Ambracia, according to Plato. This mountain gave name to a country. Step. Byz.


Gen. Ch. Cal. Spathes vague. Periand none. Cor. reflexuate, somewhat rienting. Petals five; three exterior; two of them lateral, superior; one anterior, inferior; nearly equal, erect, spreading; two lateral, interior, scarcely less: lip of the nectary (uppermost in situation) between the lateral superior petals,vaulted, egg-shaped, somewhat keeled, often bilt at the base, tender, covering the parts of fructification. Stam. Another parallel to the style, affixed to it and reflexuate, two-celled; pollen mafces oblong, nearly filiform, pulverulent. Fil. Germ inferior, egg-shaped, oblique; style erect, dilated in the middle, membranes at the tip, acuminate; stigma before (towards the lip) somewhat concave. Peric. Capsule oblong, or siercer egg-shaped, attenuated at the base, trigonous, three-keeled, one celled, opening under the ribs, constricting at the tip and base. Seeds numerous, very small, like law-dul, affixed to a columnar receptacle.

Eff. Ch. Corolla reflexuate, somewhat reflexing. Lip of the nectary vaulted. Another parallel to the style, affixed behind, erect, acuminate, two-celled.

Sp. 1. C. aphylla. Swartz. fl. ind. occid. 3. 1421. "Without leaves; roots fascicled, cylindrical, acute; item roundish; petals convivatif." 2. C. diphylla. "Roots fascicled, filiform, naked; leaves in a pair, petioled, heart-shaped, acute; item almost naked." 3. C. oligantha. "Roots fascicled, c. b-shaped; leaves petioled, oblong, acuminate, bluing; item nearly naked; scape filiform; petals convivatif." 4. C. pumila. "Roots fascicled, cylindrical, obtuse; leaves petioled, egg-shaped, acuminate; item sheathing; petals revolute." 5. C. muscosa. "Roots fascicled, filiform, tomentous; root-leaves petioled, egg-shaped; item ones sheathing; lip dotted within. 6. C. paniculata. "Roots fascicled, cylindrical, villous; leaves nearly sessile, oblong, acute; item few-flowered, pubescent at the top. All the species are natives of Jamaica.

CRANII, in Ancient Geography, a town of the island of Cephalonia, situated towards the west in a small gulf.

CRANIO-LARIA, in Botany, Linn. See Martyria and Generia.

CRANIO-LARIS, in Natural History, a species of Amonia, with an obscured from, very rarely in the Mediterranean sea, and near the Philippine isles; more frequently sold in. Also a species of Echinus found in India.

CRANIOLOGY is one of the terms used by Dr. Gall of Vienna, and his followers, in order to denote their doctrine concerning the form of the cranium as connected with the different faculties of the mind, and with the passions and propensities that character ize different individuals.

The science of craniology, as the above-mentioned sense, is of very recent origin; but it has strongly attacked the attention of the public. Particularly on the continent, where it was still more popular. That we think it necessary to exhibit, in the present work, a view of the real or pretended discrepancies which have been made on this subject.

Concerning Dr. Gall, the author of this lyceum, who is said to be a physician of considerable practice, and generally esteemed in Vienna, we are informed, that from his earliest infancy, natural history was his favourite study; and his greatest delight consisted in collecting plants and animals of every kind, and classing them, not according to the method pointed out in books of science, but according to their obvious and sensible differences. As he grew up, he fixed upon medicine to be his profession, and was led by an impius, which he considers as the result of his peculiar organization, to the habit of observation and comparison.

He was very early induced to remark the various shapes of the heads of his companions and fellow students, and to connect these peculiarities with their moral and intellectual character. Having remarked in some cases a striking conformity between the general form of the heads of those who also resembled each other in mind and temper, he inferred the general character from the general shape of the skull; but unfortunately he found, on further examination, of striking disagreement as he before remarked a certain correspondence in these observations. This forced him to retrace his former general inferences, and to be more precise in his remarks. He then began to direct his attention to the individual parts of the skull, and here he found less incon sistency in his particular deductions; but he was frequently forced to shift his ground in affixing the local organ he ascribed. At the same time he called to his aid the observations of comparative anatomy and professional experience; and after many years of laborious and constant observation, he thinks himself justified in giving the result to the public, as facts proved by experiment, not as principles or rules incapable of demonstration.

As soon as the first vague notions were formed by him, he very laboriously employed himself in collecting skulls of every description, which is much more easy in Germany than in England. He caudled models to be taken in gypsum of living characters of eminence. He made great collections also of skulls of animals, and founded a cabinet of great extent and magnitude. As his ideas became more exact, he gradually made them known, and delivered lectures on the subject. At length his fame reached the court, and the Austrian government, under that fatal administration of bhotted and weak priets, which has at length brought down destruction on it, and threatens to involve the ruin of all civilized Europe, thought it right to interfere. Gall was interdicted lecturing, because his doctrine was said to lead to materialism and atheism. However, he had already a numerous party of adherents who had interest at court; some foreign ambassadors, it is said, interceded themselves in his favour, and he was allowed to read before f-reigners only;
CRANIOMETRY.

only; that is, Austrian subjects were forbidden to attend his lectures.

At length, various unauthorized publications having been spread about the northern states of Protestant Germany, and the public curiosity being excited, Gall resolved to deliver his lectures at the principal universities and large cities in the north of Germany. In his tour he delivered lectures at Dresden, Berlin, Halle, Jena, Weimar, Gottingen, Harburg, &c. He was everywhere received with the delight of men of letters, and was invited to address the little courts where he remained; a sort of criterion in that country, determining the rank and respectability of an individual. Thus he fulfilled the double purpose of enlarging the field of his own observations, and of conferring with professional men concerning his doctrines. That these latter gentlemen were in general not forward to oppose or correct his theory in his presence, may be readily conceived. The contetl generally began when the professor was departed. Every where a contetl arose; but, I believe, says one of his auditors, in most places the majority were against our lecturer.

In presenting to the public a view of this system, we labour under the disadvantage of having no delineation of the subject from the author's own hand. Gall has declared his resolution not to write till he shall have completed a series of expensive and laborious engravings which are now preparing, when he purposed to give to the world a voluminous, splendid, and, as he thinks, decisive work. We must be contented, in the mean time, with the accounts published by some of his auditors. The most authentic of these are the following: "Lettre de C. Villers a G. Cuvier, for Une Nouvelle Theorie du Cerveau," Metz, 1802, of which the reader will find a very good analysis in the Edinburgh Review, No. III. art. 15. "Représentation de Gall's Theory of the Brain and Cranium, by C. H. Bischoff, professor of Anatomy at Berlin; with Remarks by Dr. C. W. Hufeland, director of the Medico-Chirurgical College," Berlin, 1805; 8vo. in German. It is chiefly from the latter work that an English account of the subject, entitled, "Some Account of Dr. Gall's New Theory of Physiognomy, founded upon the Anatomy and Physiology of the Brain, and the form of the Skull," London, 8vo. 1807; is derived; the author of which states, likewise, that he has attended Gall's lectures, on whom he makes the following remark: "He seems to possess the faculty of observation in a much higher degree than that of reasoning. He has acute-nes in observing the individual appearances of nature, but is not always happy in the formation of general notions; and I fear, too, that he is obnoxious to the poet's complaint;

"To observations which ourselves we make,
We grow more partial for the observer's fake."

He forms his premises readily, but he makes his deductions incorrectly." Two pamphlets in opposition to the new doctrine have been published by professor Walter of Berlin, of which, as well as of Bischoff's work, an analysis may be seen in the Edinburgh Medical and Surgical Journal for July 1806. These are the sources from which the following information has been drawn and used.

Gall thinks that he has made some important discoveries respecting the structure of the brain, which, as they are not at all interesting to the general reader, and do not affect the craniologic part of the system, we shall pass over very lightly. He was led to consider the brain as a membrane, and not as a pulpy substance, as it has hitherto been supposed, from observing that the intellectual faculties remained unimpaired in cases of hydro-cephalus internus, where a quantity of water is collected in the ventricles, and the whole substance of the brain sometimes becomes detained to a membrane, scarcely a line in thickness. Other pathological facts, such as the paralysis of the extremities, in consequence of injuries done to the hemispheres of the brain, induced him to remark, that an uninterrupted connection must exist between these parts and the spinal marrow. With the view of tracing this connection, and at the same time to demonstrate the membraneous structure of the brain, he engaged in a series of anatomical researches for many years, till at last he had the satisfaction of finding his conjectures verified by anatomical discoveries. He attributes his successes to his manner of defacing the brain from the lower parts, beginning with the cerebellum and spinal marrow, and going upwards, instead of following the usual custom of beginning the demonstration at the external superior parts, and slicing downwards; and, instead of a knife, which cuts and destroys the relative situation of the several parts, he employs the handle of a defacing knife, or some blunt instrument, and unrolls, as it were, the different evolutions of which the cerebrum and cerebellum are composed. The chief results of his anatomical investigations are, that the whole of the medullary substance of the cerebrum and cerebellum consists of nervous fibres, and the whole of the cortical substance of ganglions, by means of which the nervous fibres are nourished, strengthened, and more intimately connected. That the nerves which constitute the essential part of the cerebrum and cerebellum, as well as of the spinal marrow, are, like the blood-vessels, of two kinds; the recurrant or diverging, and the recurrent or converging, which all arise from the spinal marrow, or terminate in it, consequently, that the origin of the medullary substance of the cerebrum and cerebellum is derived from the spinal marrow. That the cortical substance is the superficial ganglion of the cerebrum and cerebellum; and that all the recurrent nerves terminate in the outer surface of the cortical substance, on which the pia mater rests, and all the recurrent nerves take their origin at this place.

Anatomists have usually thought that the medulla oblongata, the medulla spinalis, and pons varolii, are formed by elongations of the substance composing the cerebrum and cerebellum. Gall affirms directly the reverse; it is true, he goes the very opposite way to work, to demonstrate this intricate structure. Walter declares that there is no truth in what Gall pretends to have found out; the preparations displayed, and the structure described, are only the fictions of his fancy, and he protests that he saw nothing of what was said to be so clearly proved. Other persons, equally capable of judging, and perhaps more quick-minded, not only saw what Gall proposed to shew, but do justice to the accuracy of his observations, by acknowledging their firm conviction of their truth. In Bischoff's work, the names of Loder and Reil, two very eminent men in the university of Halle, are brought forward to support the claims of Gall. Loder writes in terms of great praise, and communicates a case illustrating a part of Gall's new observations, at the same time acknowledging the want of a sufficient number of cases to confirm the theory of the different organs, and declaring himself a champion in the pursuit of truth. The controversy is now in the hands of the boîf bel qualifié to judge its merits; by the observations of distinguished anatomists, the whole fabric of fame and future utility must stand or fall, and the reputation of Dr. Gall will be estimated accordingly.

The brain is in general universally understood to be the organ of thinking. But thinking is only a general term, including a vast variety of intellectual phenomena, and the
brain is a very complicated organ. Shall we then, says Gall, 
rely connected with the general affirmation, that the brain is the organ 
of mind? or shall we not rather, looking more narrowly into the structure of the brain, consider apart, in their relation to mind, those of its parts, which are anatomically 
shewn to be distinct, in the same manner as the brain, con 
considered as one simple substance, has formerly been contemplated? We shall perhaps find that this more minute re 
search is but a reasonable pursuit of the inquiry suggested by the first general observation. Gall professes to have made 
this inquiry, and to have found that we ought not to content ourselves with considering the brain as the organ of 
thought, but as a congeries of distinct organs, the existence of which alone renders that great variety and diversity of 
talents possible, which distinguish the different individuals of the same species hardly less strikingly from each other, than 
man himself is distinguished from every other species of beings we 
know.

Every one of these nervous threads perceived in the great 
ganglion of the brain, makes a particular circumvolution of the hemispheres, and is to be considered as the organ of a 
paucity function. Now, in the animal kingdom, each thread may be 
looked upon as a part on which the mind operates according to 
a determined degree of force, and its structure is so or 
organized as to receive the impressions communicated to it.

The physiologist has observed in the animal creation, that the 
nerves of these animals which are distinguished for 
smelling, seeing, hearing, &c. are marked by being num 
numerous and large, evincing a more elaborate development. 
And having been accustomed to see the optic, optic, and 
auditory nerves in animals proportionally large to the perfection 
of the senses they severally furnish the individual with, 
he will draw the general inference, that wherever any organ is 
mist with in a higher state of development, there we may 
expect to find the power dependent on it, in corresponding 
energy. But the living brain can never be exposed to ob 
observation; and from the nature of its substance, loses much of its form and texture soon after the death of the sub 
ject.

The inference of the physiologist concerning the organs 
of the brain, would therefore avail him but little, unless 
foremost among other circumstances, the brain, and its permanent covering, the skull. This condition is affe 
affected in the following fundamental position: "That the 
internal lamina of the skull is, during the life of man, 
perpetually formed by the brain itself; and that, therefore, 
where the internal and external plates of the skull run par 
parallel, we may infer the form of the brain from the outward 
shape of the skull."

On this fact, and on that before stated, that each of the 
circumvolutions of the cerebrum consists of an organ of some 
intellectual or sensible power, the greater size or develop 
ment of which would of course give the skull its peculiar 
shape, rest the sciences of craniology and craniology; the 
one of which affords, that the shape of the skull indicates the 
law, by which, not the actual character, but the tendencies 
and dispositions towards character in men, are determined; 
and the other affords, that law can be discerned and 
aferred by contemplating the shape of the skull. We are 
are not to expect to perceive the already developed faculty 
of the mind, by mere observation made on the skull; it is the 
tendency only, or aptitude, or possibility of any partic 
icular intellectual quality in any individual, that can be dis 
covered; and besides, all the predispositions cannot be fe 
lected by looking at the skull, because many of the fputted 
organs cannot influence the shape of the bones, in con 
sequence of their remote situation.

All the organs, hence all the predispositions, both in men 
and animals, are said to be innate.

The functions of the brain are threefold: 1st, organic 
life; 2dly, sensitive life; and 3dly, intellectual life. A par 
cular part of the brain is assigned to each of these func 
tions; it is only in consideration of the size of the hemi 
spheres (the part appropriated for the half of these functions) 
that man has the largest brain, and not because the size of 
the human brain is greater in proportion to the rest of the 
body, as hitherto generally suppos'd, nor on account of the 
comparative thickness of the nerves, as Soemmering has ob 
erved. To prove that the organs of thought are placed in the hemispheres of the brain, these parts are said to be 
larger, and more completely developed, in different classes of 
animals, in proportion to their intellectual faculties; and 
they are most perfect in man.

The arguments brought forward by Gall in proof of the 
plurality of organs in the brain, are, 1st, the fene of fa 
tigue, arising from the mind being long employed in one 
subject of contemplation; and the relief and delight we ex 
perience in variety; 2dly, the various degrees in which the 
different faculties are posse'd by the same individuals; 3dly, the loss of certain faculties and powers of the mind 
from wounds, disaeses, &c. affecting certain parts of the 
brain.

It may be useful to state more precisely the rules of ob 
ervation, by which Gall challenges the public, and parti 
cularly professional men, to try his statements: having faith 
in the uniformity of nature, trusting that what he has long 
uniformly seen, others will also invariably remark. 1. By a 
dete obervation of living persons in a state of health, care 
fully feeling, and correctly noting, the eminences on the 
skull, each of which he considers as an organ, using that 
term in expressing the continens pro contento; and consider 
ing that only as skull which immediately covers the brain.

"This observation has taught Gall, that persons eminent 
for certain talents have certain eminences on the skull, the 
feats of which are capable of being ascertained and pointed 
out: while those who are altogether delibute of such tal 
ents, have a sinking or defecion of the skull at this part. 
In order to make this experiment with success, Gall recom 
mends it to be tried, not on common day persons, but on 
those who are marked by strong peculiarities of mind and 
character: for perhaps every man has every kind of tal 
ent and tendency, though in so slight a degree as to be 
unproductive of any effect, from the stronger influence of 
other powers: hence the difficulty of determining the pec 
uliarities of those who manifest mediocrity in all things, 
eminenoe in none. He also prefers subjects uneducated and 
uncultivat'd, as the natural tendencies of their character 
have been left more to themselves, while the polish of socia 
life tends to rob off the prominent peculiarities of individual 
formation. In feeling for the organ, he recommends the 
uf', not of the fingers, but of the middle of the palm of the 
hand: and declares that habit, as well as a certain natural 
delicacy of touch, is necessary to qualify a person to make 
these observations with certainty of success. 2. But some 
of the organs lie at the bafi of the skull, and on its lower 
face; these must be sought for after the death of the sub 
ject. 3. The observation of persons during a state of dis 
saes. 'This is particularly applicable to desacese of the 
intellect.

Infancy is, in the opinion of Dr. Gall, a disae of the 
brain; and as we observe a fort of partial infancy, so he is 
of opinion that parts of the brain may suffer a peculiar af 
fecion, while the other parts are left comparatively in a 
healthy state: but that the whole brain must be in a very 
dangerous
dangerous condition, is as obvious as the want of confidence in a person lunatic, or partially insane. Supposing there is in the brain generally a tendency to disease, Gall is of opinion that the prominent and eminently developed organ would be peculiarly liable to be affected. Hence Gall affords an ability at all times to determine, upon an examination of the skull of a lunatic, in what way his insanity be

travest itself, even if such lunatic should have avoided every actual expression of it. In mad persons, who have fancied themselves to be God, or Jesus Christ, or a helping prophet, as well as in those who suffer the agonies of religious despair, he has uniformly found the organ of theol

ogy. Thus it is that the fixed ideas of the insane are determined by their organs, and wherever any organ is found in a neck of fashion, there is always danger left a deficiency of the brain should produce a corresponding malady: at the same time, it is possible, that where the profusion and habits of men lead them to exercise a particular organ, and let it in a condition of great activity, though by nature there may be no peculiarly marked organ, yet that the disease may fix upon the organ so put into activity. And as the influence of life and habit upon the organ is as large as that of the organ upon life, Gall advises that in many cases persons should try to refit the tendency of their moods, by follow

ing pursuits altogether the reverse; for instance, if he knew a young man of a melancholy turn of mind, full of nervous sensitiveness, confessions and scrupulons, in whom also the organ of theology should be found in a higher degree, instead of allowing him to follow what would probably be the bent of his inclination, the profusion of divinity, he would urge him, on the contrary, to pursue an active life. This observation has led Gall to the application of cooling remedies on that part of the skull where the organ lies, from the diseased activity of which, the disorder proceeds. In the same way, when we observe that habits of thought and ideas, by diminishing the activity of the physical organ producing them, or whether we diminish the activity of the organ, by forcing the mind to other pursuits; that is, by rousing other powers, and setting other organs in motion.

4. By observing the influence which wounds and injuries of the brain have upon the intellectual powers and inclina

tions of men. 5. The comparison of the skulls of animals with their powers and qualities; and also of both these with the skulls and powers of men. 6. Impressions in gympsum of heads and skulls.

The organs of which Gall supposes that he has discovered the seat in the human cranium are twenty-six in number; and are divided by him into three classes. 1. Those by which man is immediately enabled to enter into connection with the external world. 2. The organ of sexual love, at the lower and back part of the head. 3. The organ of parental and filial love, and the animal feroce, at the upper portion of the occiput. 4. The organ of friendship or gratitude, at the crown and back of the head. 4. The organ of fighting, a little above and behind the ear. 5. The organ of laughter lies before and above the preceding organ of fighting, occupying the squamous edge of the parietal bone. 6. That of address or cunning, is before and above the latter, and is seated in the sphenoidal angle of the parietal bone. 7. That of cupidity is the organ of address, continued almost to the eyes. 8. Of good-nature in the centre of the upper part of the forehead. 9. Of mimickry or imitation, at the side of the organ of good nature. 10. Of vain-glory or vanity, at the back of the parietal bone, and at the side of the organ of loftiness. 11. Of constancy or firmness, in the middle of the top of the skull, where the frontal angles of the parietal bones meet.

II. The second class of organs includes those by which we are enabled to acquire a more familiar acquaintance with objects, which are known to us by means of the external senses.

12. Organ of aptness to learn and retain things, lies immediately over the root of the nose, between the two eyebrows, upon and above the glabella. 13. Of aptness to learn and retain places, fills that half of the eyebrow which is towards the nose. 14. Of aptness to recollect persons (dubful) at the upper part of the inner side of the orbit. 15. Of the sense of colour, lies in the superciliary arch, on the outside of the organ of taste. 16. Of aptness to learn and retain music, above and behind the exterior angle of the eye, where it adjuts the organ of the eye. 17. Of aptness to learn and retain numbers, is placed on the outside of the organ of music, at the extreme end of the arch of the eyebrow, and at the exterior upper angle of the orbit of the eye. 18. Of aptness to learn and retain words, at the upper and back part of the orbit, producing in the living subject a prominent or goggle eye. 19. Of aptness to learn and retain languages, on the upper and anterior part of the orbit, in order to depress the eye, and make it appear rather hanging than prominent. 20. Of mechanic art, behind the organ of number, and below the point where the organs of music and cupidity meet. 21. Of prudence or circumspection, about the middle of the side of the head, or nearly in the centre of the parietal bone. 22. Of loftiness, at the back of the top of the head; i. e. at the posterior part of the sagittal future.

III. The third and last class of organs, are those which constitute the peculiar prerogatives and glory of the human race, and which more eminently raffe man above the brute creation. They all lie on the crown of the head, or on the forehead, that part of the skull, which is the abode of the glorious characteristic of humanity. The forehead rises in animals as they are advanced in the scale of intellect, but it is in man alone that the front affumes that graceful swell which so much adds beauty to the eye of taste, than significant to the phisognomist.

23. The organ of rhetorical accentus lies on the middle of the forehead, above the organ of things, and beneath that of good nature. These three organs follow each other therefore in a straight line drawn from the glabella to the sagittal future. 24. Of metaphysical subtlety; on each side of that of rhetorical accentus; so that when strongly marked with the last organ, a prominent round swelling is formed. 25. Of wit: at the outside of the last mentioned organ. 26. Of theolgy, in the centre of the top of the forehead.

To enter into a detailed consideration of all these organs, would extend the present article beyond its just limits: we shall therefore transcribe the account of one or two of the organs in order to give the reader a general notion of the kind, and proof and illustration on which the theory of craniology is founded.

"The organ of sexual love (says Gall) is placed in the cerebrum. It comprises that part of the os occiput, which lies below the linea semicircularis inferior, towards the great occipital hole, and in living subjects, therefore, is to be judged of only by the thickness and breadth of the throat and neck. It appears double on the skull; though the two organs and eminences of the cerebrum join, yet each produces a swelling apart on the skull, occasioned by the crista occipitalis interna, which lies between them.

"As the sexual passion arises, this part of the brain grows into disproportion to the other parts; and when, by
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calibration, the purposes of nature in the formation of this organ are defeated, we find that it ceases to develop and perfect itself. It is observable in all who have suffered this operation when young, that the back part of the skull, as it were, ceases to grow; the neck is narrow, and the voice, whose seat is in the throat, loses its manly vigour.

"This remark is equally made in many species of animals. In the more simply framed animals, as in certain insects which generate in the usual way, the whole mass of brain consists of mere knots, which are, as it were, the commencement of the cerebellum: while in those other animals, which do not procreate in this way, these knots are wanting. The allusion and the bull have a more perfectly developed cerebellum, and consequently have a thicker neck and broader head behind, than the gelding and ox. This is known to the common people, who are concerned in the breed of horses, who give the preference to those stallions whose ears stand the widest apart. The male mule, which has no power of procreation, generally speaking, has a very narrow neck, and the ears stand close together. It is further observed, that the horns of the ox are much larger than those of the bull, for the reason before stated, that the process of ossification increases as the brain diminishes; from the same principle are the phenomena attending the growth of the horns in the stag. If at the time of rutting, the horns are cut off, the animal loses its power of procreation, in the effort of nature to reproduce this substance. The channel in which its strength should run is turned aside, and it does not recover its generative faculty till the horns are grown again.

"Throughout the whole class of quadrupeds, the neck of the male is thicker than that of the female. Gall attributes this to the longer duration of the sexual appetite in the male.

"There are may phenomena, in cases of disease, tending to the same conclusion. In the nymphomania, Gall has found the neck very hot, fowling, and painfully inflamed. He related the case of a woman of rank and character in Vienna, subject to the most violent attacks. She was frequently feized with convulsive affections in the neck; and in a sort of mania, her ears would violently knock the back of her head against her back and shoulders, till the obtained relief by means of a feminal discharge.

Wounds in the neck and back of the head will produce inflammation of the parts of generation, and even impotency.

"In nervous fevers, fatyriasis is not merely a local disease, but a general evil of the whole nervous system: and to be removed only by some general remedy applied to the nerves. This seems to intimate the participation of the brain in generation.

"The cases of hydrops cerebri are also in favour of the fame doctrine. It is found that of all the general functions of the brain, that of generation is often the only one which remains undisturbed; and for a very natural cause, that the cerebellum supplies lakt of all parts of the brain.

"Cretins are notorious for their lasciviousness, while they are without the common intellectual powers; and their cerebellum is unusually large. The known effects of sleeping on the back, Gall also attributes to the pressure and warming of the cerebellum.

"Among other cases of insanity, he related one of a man, from whom the fixed idea could not be removed that he had six wives. The cerebellum was found monstrously large after his death. Once, on entering an hospital, in which he never had been before, he heard a mad woman uttering the 'grovel' obscenities; he directed the attendants to go and examine her head, declaring that if they did not find the skull remarkably large behind, he would renounce all his opinions. He was not deceived.

"The bust of Raphael, which was made from an impression taken in gypsum, exhibits a sort of Bag behind, announcing that tendency of his constitution, to which he unhappily fell an early victim."

On the organ of aptness to learn and retain places, we have the following remarks.

The function which this organ is destined to fill in the inferior animals, is, that it gives the power of seeking out distant places, and of finding them again, when long deferred and left at a great distance. Birds of passage, such as swallows, florks, &c. are all marked by this organ; and it is known of such birds that they have a perfect recollection of their ancient places of residence. Swallows will return, year after year, to the same nest. Pigeons, which are used as letter-carriers, have also this organ. The capacity which animals (dogs for instance) have of following their masters, as well as of returning to their home, has generally been attributed, and often truly, to the acuteness of their scent; but many facts are known, which do not admit of this explanation. Gall related an instance of a dog taken to England from Vienna, which soon escaped from its new owner, went along to the port, contrived to get on board a ship, and accompanied a gentleman to Mentz, whom he there deserted, and then took his course alone to Vienna. Whence can this uniform and otherwise inexplicable instinct arise, in a certain species of animals? And why should not this instinct be attached to a peculiar structure of the nerves and brain?

"In men, this organ seems to operate variously; but in every case it is connected with a disposition to observe the relations of space, and produces a delight and a peculiar ability in those occupations which depend upon such relations. For instance, both marshal Laudon and general Mack are distinguished by this organ; and these generals are both said to possess, in an eminent degree, that important part of the duty of a commander-in-chief, which lies in a skilful distribution of troops in the field; what may be called the geography of war.

"It generates the love of travelling. After Gall had formed his opinion concerning this organ, he was struck by meeting a woman of low rank in the streets of Vienna, on whose forehead the organ was so strikingly marked, that he took an impression of her head for his cabinet. On inquiring of her concerning her life, he found she was pestered by a very mania for wandering. At sixteen she ran away from Munich to Vienna, where she lived, not as a servant at one place, for she could not possibly stay long in any family, but went from inn to inn, where her reliefs love of change was belittled. She, as well as all persons thus organized, had a surprising skill in finding her way in strange places. We all know how very different this ability is in different persons, and that it stands in no general relation to the intellects in general. The portraits and busts of most eminent travellers and navigators are marked by this organ. If I mistake not, the biographer of captain Cook mentions his countenance being distinguished by overcharged eyebrows."

Having thus given a general view of Gall's doctrine, we proceed to state the objections which may be made to it. Thefe, indeed, occur to us in such number, and of such strong weight, that we cannot help feeling surprized that Gall should have made so many prolelytes, as we understand him to have met with, and that his system should have attracted so much of the public attention.
The foundations on which the whole doctrine rests, seem to us to be completely false; and the structure which Gall has raised on them, is supported by nothing but fanciful analogies, and the most loose and inapplicable kind of reasoning.

The first principle of the system, that the different faculties of the mind have each their separate and independent organ, offers to our consideration a most questionable position. At least, Gall’s arguments in favour of the separate localities of thought are not at all convincing. The sense of relief from a change of subject, after long fluency, is proved as a proof, that the part employed is different. But does not this argument almost beg the question? At least, does it not make too great use of the sense of muscular fatigue, which can be applied, only by a very loose analogy, to the brain? It is evident, that the brain, if it have any laws similar to those of muscular motion, has a much greater number peculiar to itself; and by what observation has it been shown, that the peculiar affection of the brain, which we call, only by analogy, the sense of fatigue, may not wholly give place to a different series of affections of the same part? Even if the question were to be decided by analogies, those which justify this opinion are more numerous, and certainly more close, than those which are taken from the contractions of the voluntary muscules, since they are drawn from parts more immediately contiguous with the brain. The fame eye which has been gazing on one species of light, finds relief from a more change of colours; and, throughout the system, when one stimulus, from too frequent repetition, has ceased to produce effect, an effect is produced by a new stimulus, even of less absolute power; though we cannot suppose that the former parts are unaffected, and that each stimulus has its peculiar seat of action. We may remark also, that the relief takes place only in a certain degree, and is not enough to justify the supposed analogy; for, if one faculty be greatly fatigued, all the other faculties are reduced to a state nearly similar. Yet we know that one arm may be bent, in one continued attitude, till it be almost palsied with fatigue, when the other extremities are still in all their vigour, or, at least, have their vigour but slightly impaired.

The second argument added, is the partial loss of power, from external injuries of the brain, and from madness, and other diseases. The fact is certainly one of the most curious in the whole physiology of mind. But, unfortunately for Dr. Gall, it is found more frequently in the same faculty than in different faculties; and the health and disease are, consequently, according to him, in the same part. Such are the cases of persons, who have lost the memory of one language, and retained that of another; of this partial forgetfulness, there are many varieties, in kind, and in degree. One interesting case is related by Mr. Villers, from his own knowledge. It is that of a young lady, of very good understanding, at Frankfort, who, after much opposition from her relations, had, at last, obtained their consent to her marriage with a person whom she passionately loved. After recovering from a long illness, which succeeded her first delivery, she completely lost the memory of all the time that had elapsed since her marriage, though remembering every other period with as much accuracy as before. From the sight of her child, presented to her, as her own, she turned with amazement and horror; and though now, on the faith of the assurance of all her friends, content to consider herself as a wife and a mother; she still looks on her husband and child, without being able to conceive, by what magic she has acquired the one, and given birth to the other. Unless, therefore, Dr. Gall call in the aid of the infinite divisibility of matter, and allot a different seat to each idea, each faculty, it is evident, are more in opposition to his system than in its favour; since they shew, that what is confessedly the same part, may have lost its power in one respect, yet retain it completely in every other.

A third argument is drawn from the various degrees, in which the different faculties are possessed by the same person in perfect health. But, unless the question be assumed, we do not know if there is more in proof of one opinion, than of its opposite. A mathematician, for instance, may have a poetic taste. The perception of the relations of mathematical ideas forms one series of affections, the perception of the beauties of poetry includes another series; and the two series are different, whether they be affections of the same organ, or of different organs: nor is there more reason, a priori, in the one case than in the other, that because one series exists, the other should exist also. We know, that in parts, which are confessedly the same, and originally even capable alike of either series, as in the muscular motions necessary in two mechanical arts, there may be produced the utmost facility of one series, while in the other there is all the awkwardness of the most unexercised organs.

If however there were no other arguments on this subject, the records of morbid anatomy alone would suffice to overturn the unstable structure of Gall’s system. There will shew us that there is not a single part of the encephalon, which has not been impaired or destroyed, without any apparent change of the intellectual and moral faculties. In the great work of Haller there is a very full collection of cases of this kind (Element. Physiol., tom. iv. p. 392); and there is a similar catalogue in the fourth volume of the Manchefer Transactions, where Dr. Ferrier has related many of Haller’s cases, with considerable additions from other authors. Against Dr. Gall, however, in particular, it may be of consequence to state, that, among the cases to which we refer, are some, in which the whole cortical part was wasted or corrupted, while the senses remained entire. Nothing can be more evident than that, if many organs be scattered over the surface of the brain, the entire and exclusive loss of one faculty should be, in so many cases of local injury, not a rare, but a common occurrence; and that, with the loss of the whole circumscribed part of the brain, the whole of those powers, which have their seat in that part, must necessarily perish.

If the organs of many of the faculties be, as Dr. Gall affirms, double, since a disease of one side of the head does not necessarily imply a disease of the other side, each organ, even in health, must have its separate affections, which may correspond, but which may also be dissimilar; and the two may thus be exercised, at the same moment, on different subjects, or from the same subject give opposite results. Thus, says an ingenious critic, the mind should be capable of completely believing, and, at the same moment completely disbelieving the same proposition. One of the organs of imagination, in a virtuous patriot, may thus be mourning over the probable ruin of his country, while the other is feeding on the profits of an offered place; and, perhaps, in this way, arc to be explained many of the instances of timid irresolution in ministers of state; since the system of Dr. Gall fairly gives them the double head of Janus, and allows one organ to be eager for war, while the other is equally eager for the continuance of peace. Nor is it merely to similar organs, that this remark is applicable. The faculties, having all organs that are completely divided, cannot interrupt each other, but may all be exercised at the same moment: and fermons and fyllems, pins and poetry,
be thus one general and simultaneous product. It is certain, at least, that all the organic affections may co-exist; and if it be thought that the mental affection must, notwithstanding, be single, because the mind is not capable of influencing, or being influenced by more than one organ at a time, we must attend to the analogies of the organs of taste and muscular motion, which, united, we bring the question as to the separate intellectual organs, are the only analogies afforded us. In these however we must consider, if not of simultaneous, at least of rapidly succeeding affections of different parts, very unlike the unity of thought. We can walk, and listen to a conversation, and remark the objects around us, without being conscious of an interruption of the exercise of the different organs employed. But there is no one, who, without being sensible of a very difficult transition, can write flanars to the eyebrows of his mistress, while he is solving a question of geometry or metaphysics.

Even though we were to concede to Dr. Gall, the truth of his general and more important doctrine of the faculties of thought and passion, we should certainly be little inclined to ascribe with him, the difference of power merely to the quantity of the parts of the brain, and that in a manner already indicated by the appearance of the cranium, as indicative of character; nor indeed, though it were certain that the difference of each power arose from a difference of quantity, would our reliance be much increased. That the general strength of the vital, moral, and intellectual powers is great in each individual, in proportion to the quantity of the encephalon, in an affection, to what the experience of every one must have furnished him with a reply. Every person must have known large crania connected with very great dulness of these powers, and others in which they have all been condened into a very small compass.

Dr. Gall himself is said to protest strongly against the attempts which have been made, to reduce his doctrine to a species of phystigomy; yet, unless he himself consider the phystigomical application of it as allowable, we do not see how he is justified in drawing any inference from the inspection of a skull; and, if he do consider it in this light, he is not justified by the principles of his own theory. For, as the faculties are not all to be found in different points of one circumference, but lie under each other, in what may be called concentric circles of the encephalon, the elevation and depression of the skull may be produced by the elevation and depression of a deeply seated organ, the superficial remaining the same; or the superficial one may be greatly increased or diminished, and the increase or diminution be compensated by the opposite side of some deeper organ. The appearance of the skull therefore, even where we have an opportunity of examining the inner plate, is not indicative of the nature of any one power, and can be depended on, only as marking the superficial shape of the brain, and its mungsings.

For what reason, except for the sake of this cranioccephalic phystigomy, Dr. Gall has chosen to ascribe a difference of power to a difference of quantity alone, it is not easy to discover. It is at least equally probable, that the peculiar affections of the brain depend, in a great measure, on the minute differences of composition and texture; and even in this way only, unless we admit an original difference in the mind itself, which Dr. Gall never takes into account, can we explain the possibility of great powers in a small cranium—what is that fene of fatigue, on which he himself has laid so much stress? The organ of the faculty employed is adversely not diminished, or not diminished in any measurable degree; yet its power is now completely different. This state of the brain is a certain state of it; and we can conceive that of two brains, of dimensions exactly similar, one should be naturally in this state of dulness, as well as in any other state, in the same manner as we consider the power of the brain to exist in one degree of quantity, as much as in another. The quantity is therefore not the measure of the power; since, confederately, the quantity may be the same, while the power is different. The great changes produced in the liveliness or lethargy of the faculties, by wine or opium, and in general by every stimulant or sedative, are reducible only to that law of the fenfornium, by which the power is as the state of the part in quality, not in quantity. If Dr. Gall's theory were just, all moral education would be useless; for he has not attempted to convince us by any observation or experiment, that we have it in our power to reduce or amplify the organs of the affections. As, where there has been no external nor internal injury, the organ of sight must always afford its peculiar sensations, when colours are presented to it, the organ of the inclination to theft must always be affected in its peculiar manner, on the sight of an agreeable object. It is vain for us to pretend motives of bodily fear that of infancy; for these act only on the organ of rage, or of pride, or of judgment, which may be of greater or less size, but do not, by any of these affections, diminish the size of the organ of theft; and hence, if with the organ of this inclination, that of voluntary motion be in good understanding, an incessant series of theft's must ensue. In like manner, if there be any young man, of dispositions as yet uncorrected, in whose fate we take an interest, our anxiety for the preservation of his virtue is superfluous. Let all his companions be profane, and selfish, and disolute; what have we to dread? They cannot diminish the size of his organs of benevolence, temperance, and religion; and, till that diminution be possible, there is no influence in reason, or in ridicule, and no contagion in example.

Such are the reasons which prevent us from acceding to the fundamental positions of Gall's theory; that the different mental faculties, the passions, &c. are seated in so many separate organs of the brain, and that the strength or vigour of these is in a direct ratio with the size of the organ. But if these difficulties were surmounted, if the author had succeeded in proving these points fairly, only, objections no doubt greatly will remain to the other conclusions, which would, in our opinion, be insufficient to overawe us. On contemplating the surface of the hemispheres, in the situations pointed out by Gall, we meet with no prominences, where he describes the various organs to exist; but find the brain to present an uniform and general convexity. We ought, however, to find the organs most easily and clearly on the surface of the brain, even if they are not very apparent in the living head; where the covering of membrane, skull, and integuments, may obscure their situation. In the basis of the brain, where the surface is much more distinguished by convexities and inequalities; and in the interior of the organ, where there are several very decided and constant eminences, and much curious structure; where, of course, we should naturally expect to find the seat of several organs, none have been pointed out.

The cranioccephalic part of Gall's doctrine, or the examination of the cranium, with a view to discover the character and prevailing propensities of individuals, falls on an assumption, which we pronounce to be not merely questionable, but most clearly false; viz. that protruberances of the brain influence the cranium, so as to be attended with corresponding convexities of its surface; that the inner plate of the skull bears a most accurate impression of the surface of the
the brain; that the various convolutions of this organ mark it with the most obvious finitivities; and that the veins of the dura mater imprint very deep channels on the bone; are facts which could not escape the most superficial observer. But it is equally clear that the external surface of the bone has none of these marks, that they affect, therefore, the internal lamina only, and that all the front, upper, and back parts and fields of the cranium present a nearly level surface. Hence, if there be a prominence of the brain or its meninges, in any situation, it excavates the skull and renders it thin, instead of elevating the surface into a tumour. Thus the glandular-papillations of the dura mater render the substance of the cranium so thin, as to make it appear semi-transparent, when held against the light; and the writer of this article lately observed in the head of a man hanged for murder, a remarkable and unusual prominence of two or three convolutions, in the situation pointed out by Gall, as the organ of metaphysical faculty and wit; instead, however, of causing a corresponding external protuberance, they had only reduced the frontal bone to a state of unusual thinness.

In many parts, the external surface of the cranium, so far from any possibility of being modified by the form of the brain, is most clearly influenced by other causes. The root of the nose and eye-brows will assume a shape of greater or less prominence, according to the size of the frontal sinuses, which are well known to vary greatly in different individuals; yet, over their very cavities, Gall places the organs of the memory of places and colours. His organ of aptness to learn things lies over the spine of the os frontis, and that of music on the external angular process of the same bone, neither of which parts can possibly denote any protuberance of the brain. The side of the cranium is flattened by the temporal muscles, which acts with at least as much power on the outer plate of the skull, as the brain can on the internal surface. Hence, the deviation of this part of the skull from the general globular form of other parts of the bony case. Yet, in this very situation, where the action of the muscle thus depresses the skull, we meet with a whole host of organs; viz. those of fighting, slaugher, cupidity or theft, address or cunning, music, mechanic art, and a confederate portion of that of prudence or circumpection. In carnivorous animals, where the fibre of the temporal muscle is immense, and the whole cranium seems, as it were, compressed between the two opposite muscles, we are gravely told that there is a remarkable prominence in the situation of the organ of slaughter.

The objection, which we have been just illustrating, applies with still greater force to several of the examples which are drawn from comparative anatomy. The two tables of the skull are separated by numerous air-cells throughout their whole extent in many birds, which Gall calls do not hesitate to adduce, in proof of particular organs. In the elephant, which is also pressed into the service, the skull is in the same manner hollowed out into numerous and large cavities containing air. The brain of the crocodile does not nearly fill the cranium, and cannot therefore influence its form; so that this animal might have escaped the author's censure for the want of parental affection. We may, indeed, enter a general objection to the introduction of comparative anatomy, with any weight of evidence, in a quiddity of this kind. If any fact be certain of the nervous system, it is, that the different parts of the encephalons and its great appendage are in the different classes of animals, of very different degrees of importance to the exercise of the powers of life. When, after the amputation of that part, in which, according to Dr. Gal, the whole powers of life are included, birds can still perform the most important functions, insects continue to live and procreate, and cold-blooded animals remain for a while to exercise almost every faculty, which they before were known to possess, we cannot allow, in circumstances so different, any great degree of force to observations which proceed on the faith of complete similarity.

As we have already accused Gall of describing prominences, &c. where there really are none; so we may, on the other hand, complain that he has neglected a point of consideration, in which numerous striking differences are observable in the cranium. We allude to the national differences in the form of the head, which mult, according to his theory, he attended with corresponding variations of the mental faculties, and ought, therefore, to afford the most important results. (For an account of these, see Cranium.)

In the preceding examination of the stytem of Gall, we have attended to those fundamental positions on which the whole doctrine rests, and the destruction of which must involve the annihilation of the entire system. This will relieve us from the necessity of a detailed consideration of the author's observations on the different organs, which are universally expounded to the most well-grounded censure; and which leave on the mind of the reader, the general impression, that their author is very ill-acquainted with the first principles of reasoning and induction. We should, indeed, be as liable to question many of his facts. Is it possible that he should have found one-half of a man's brain "entirely mouldy"? Some of his observations on the mechanical excitations of the organs, are too ludicrous for any serious consideration, and would certainly justify the ridicule which the whole systém has not unfrequently excited. When a person is unable to recollect any thing, and rubs his forehead backwards and forwards, we are informed that he is immolating his organs of memory. Proud men raise themselves frequently on their toes: they hold their heads backwards, that the organ of loftiness may itself become more elevated. The timid man scratches his head on the organ of courage behind his ear, as if he tried to stimulate his feeble organ to activity.

CRANIOSCOPY, the examination of the skull, from which we understand the skull, and στομα, I examine. This is a newly invented term, denoting that science which procures to investigate the influence which the form of the brain exerts on that of the cranium; and to draw from such observations, inferences as to the general character of individuals, their moral and intellectual qualities, their passions, propensities, &c. See Craniology.

CRANIUM, in Oology, that division of the head which forms the bony cavity for containing the brain. The corresponding term in English is the skull; that, however, is not limited like the word cranium, to the bone which forms the brain-case, but is applied to the whole head. It is derived from κασα, a helmet; as it covers and protects the brain, like a helmet does the head. Calvaria, in Latin, is used in the same sense with cranium; but is applied, perhaps, with more propriety to the superior arch of the cavity; to that part which, in English, is called the skull-cap. The following synonyms will also be found in different writers: κασα, κασα, κασα, κασα: calvaria, cerebri galea, telfa, or scutella capit. The bones of the head are usually distributed into two divisions; those of the cranium forming an oval vaulted cavity, which holds the encephalon; and those of the face, containing the parts concerned in mastication and deglutition, with the organs of sight, smelling, and taste. The close.
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close connection of these parts, and the necessity of considering them both together in the view which we shall give of the characteristic differences of the heads of various nations, would render it extremely inconvenient to adopt such an artificial division in the present work. We shall, therefore, describe the bones of the face, as well as those of the head, in the present article; and shall consider also the structure of the teeth, that the reader may possess, in one view, a connected and systematic account of the osteology of the head.

The arrangement of the subject, which appears to us the most eligible, and which will, therefore, be adopted in the present article, is that of making, in the first instance, a few general observations on the formation of the bones, their peculiar mode of connection, &c.; then, of proceeding to describe the individual pieces; and, lastly, of referring the consideration of the head, as a whole, to the end; where its form, together with the relations of the cranium and face, and the deviations from the general standard, which it exhibits in the different varieties of the human species, will be more easily explained and understood.

The external surface of the cranium is everywhere covered by a thin and closely adhering membrane, called the pericranium; which is jut the same as the periosteum of the other bones. The cavity is lined by another membrane, the dura mater, connected to its surface with equal close-ness. This may be considered as the perietum of the internal table; for it feeds at all parts numerous vessels to the substance of the bone. Hence, it cannot be separated from the skull without considerable force; and the nature of the adhesion is demonstrated, after such separation, by the numerous bloody points on its surface, arising from the torn orifices of vessels, which went to the bone. This membrane performs so important a part in the nutrition of the skull, that its separation from the internal table, in consequence of suppuration, causes the death of the bone, although the pericranium should be still adherent.

The thickeness of the cranium varies considerably in different parts of the cavity. It may be stated, as a general observation, that the upper vaulted portion, which forms the skull-cap, and is liable to accidental injury and violence, is the thickest; and the bass or lower portion of the cavity, which is not exposed to these dangers, is the thinnest. The frontal bone, jut above its osseous angular process, and the posterior triangular portion of the occiput, particularly at the transverse ridge, are thicker than other parts of the skull. With the exception of the ethmoid bone and orbit, the lower portion of the occiput and the temporal region are the thinnest; but these parts are protected by the insertion of strong muscles. Several pits and furrows, which are formed on the inner surface of the cavity, render its density very unequal, even in different parts of the same head: hence, if a skull-cap be held against the light, it is almost transparent in some places. The thickeness of the bone varies in the same head from about the fifth of an inch to a mere line. Great variety is also observed in the density of the skull of different individuals; so that we cannot conclude, because a person has a large head, that the bulk of his brain is proportionate. It is generally observed, that a large brain is covered with a thinner skull than a smaller one. Where the skull is thickest, it is found to consist, as the other flat bones of the body do, of two plates of compact substance, called the external and internal or compact, and of a more loofe interving bony texture, termed the diploe. The distinction of these parts cannot be traced in many situations; nor does it exist in very young subjects.

The substance of the cranium does not vary much in structure in the different parts of the same individual; if we except the petrous portion of the temporal bone, which is composed of the hardest and most compact osseous substance in the body. In different subjects, the cranium, as well as the rest of the skeleton, may vary in firmness, solidity, and smoothness.

The outer surface of the skull is tolerably smooth and uniform on its upper and back part and sides; and, with the exception of two or three very small foramina, is entire and imperforate. The bafus, on the contrary, is very irregular, and presents numerous openings for transmitting blood-vessels and nerves.

The inner surface of the skull presents everywhere an exact impression of the brain; so that a call of the cavity, taken in plaster of Paris, would represent most accurately the form of the encephalon. It is a curious fact, that the bones always adapt themselves to the form of the soft parts, instead of influencing the figure of these, as we should, a priori, have been disposed to expect: the circumference is very strikingly exemplified in the cranium. The glandular pacchioni of the dura mater form numerous pits along the middle and upper part of the bony vault; the sides of the cavity are marked with deep ramified channels, in which the blood-vessels of the membrane are situated. The convolutions of the brain leave broad superficial impressions over the whole vitreous table; (the grooves are the impressions digitate, and their rising margins the juga cerebra of authors;) these are most distinct in the bafus crani, and particularly on the orbital plates of the os frontis, and the surface of the temporal bone. They are, however, manifest over the whole upper part of the cavity; which fows sufficiently that it is not the mere weight of the parts that gives rise to them.

The individual bones of the head, with the exception of the lower jaw, ossicula auditis, and teeth, are connected to each other by an innumerable species of articulations peculiar to themselves, called futures; so that when all the soft parts have been removed by maceration, these bones are still held firmly together. This mode of union allumes different appearances under various circumstances. Most frequently the margins of the bones are furnished with numerous small procaces or denticles, which are received into corresponding cavities of the opposed edges: hence the line of junction presents an irregular ferrate edge. This is the true future (future vere ferrata, or dentata); and the other modes of union are called false or furious futures. When the bones are joined in a strait line, as it should seem from mere contact with each other, it is called harmonia (futura harmonica). Lastly, there is the futura ljuyamosa, when the edges of the bones, extended to a very thin margin, overlap each other like the scales of a fish. Yet neither the harmonia nor ljuyamosa future are formed by the mere contact of the bony surfaces; for there are in both cases small prominences and depressions, which, being adapted to each other, render the union firmer than a mere apposition would make it.

The mode in which the teeth are implanted in their sockets is distinguished by the term gompbaha, from gopoulos, a nail; and the union of the lower jaw with the azygos procaces of the pheonoid bone on the one part, and the middle palatine future on the other, is called shevndyleha.

Where the bones are thin at their line of junction, the futures connect them in a perpendicular line: they are joined together where the bony substance is thicker; and each bone overlaps the neighbouring ones at some points, while at others it is overlapped by them; so that the whole compages gains additional strength and security, and it is impossible
possible that any bone should be driven in upon the brain without a fracture. In every instance, the futures, which may be very ferrated on the external surface of the skull, are much moreimple on the internal table; where, indeed, they present the appearance of harmonia. This difference in the appearance of the external and internal surfaces shows the futility of the common mechanical explanation of the formation of futures, by the fibres of the opposed margins shooting into each other.

The cranium of the fetus does not possess futures: its bones have very thin margins, and are separated by membranous intervals, so that they can overlap each other considerably, and thereby admit of that compression and alteration of form, which the head experiences in passing through the cavity of the pelvis. As the ossification of the body proceeds, the edges of the bones come in contact, and form the futures. The bony margins leave larger intervals in two situations of the skull, than in other parts; and it is of course longer after birth that these openings, which are called fontanelles (bregmatas), are closed. The anterior, or large, is formed between the parietal and frontal bones; the posterior between the former and the os occipitis. We cannot state with accuracy the precise period at which these futures are formed in a young child. The three edges of the os parietis, which are joined by true futures to the neighbouring bones, begin to close towards the end of the first year; and their edges are completely in contact, except at the anterior fontanel, towards the middle of the second year. These vacancies are, however, sometimes not closed till a much later period of life. Thus, Caspar Bashin states the fontanel to have been still open in his own wife, at the age of 26 years. (Theat. Anat. p. 280.) And other facts of the same nature are recorded.

When the futures are fully formed, the whole skull may be regarded, to all intents and purposes, as formed of a single piece of bone. In the latter periods of life, the futures often disappear by the coalition of the opposed bones; and they are lost first in the internal table.

Separate pieces of bone, of various form and size, are often found in the course of the futures, connected to the margins of the contiguous parts by future. These are the os triquetra, or squamiana; and are most frequently met with between the occipital and parietal bones, although occasionally in other situations. As the presence of these is very uncertain; as they cannot be considered to belong to the ordinary formation of the part; and as their position, number, form, and size, vary almost infinitely; they are not enumerated among the regular bones of the skull, but are considered as unusual separate parts of that bone, to which they would have belonged, if the structure had been of the most natural kind. It is curious to observe the exact and symmetrical arrangement which these bones sometimes exhibit. They may be found of precisely the same form, and occupying exactly the same situation on both sides of the cranium.

The separation of the bones of the cranium, by membranous intervals, in the fetus, is of obvious utility in facilitating the passage of the head through the pelvis. It is not so easy to prove satisfactorily, that any advantages are derived afterwards from this peculiar mode of connection; or that the cranium is at all differently circumstanced, in consequence of the futures, from what it would be, if it consisted of a single piece of bone. The old opinions, which state that there is a transpiration of fluids from the brain; that there is a more free communication between the external and internal vessels here, than in other parts; or that the futures open under circumstances of disease, so as to relieve the brain; are completely unfounded. Nor is there any better ground for supposing that they are formed in order to give a firmer attachment to the dura mater; or that they flop the course of fractures. A more rational explanation of the subject appears to be this: that the futures connect together the individual bones with a firmness sufficient for the security of the brain; yet in such a manner, that the separate pieces admit, in the early periods of life, of being distended by the brain, and making room for its growth. It is said, that if the bones of the cranium were not separated by the futures, but formed one piece, they must cease to grow after birth, unless the formation had been conducted on other principles; but that, on the present plan, the growth of a bone of the cranium proceeds like that of any other bone. The separate pieces being joined by futures, or rather by lines of cartilage, are gently separated by the growth of the brain; and hence the cartilage would become broader, if its former part were not at the same time converted into bone: thus the bones of the cranium are enlarged like the cylindrical ones, by the separation of their epiphyses, or, what is the same thing, they grow by their edges. This view of the subject is confirmed by observing that the adhesion of the dura mater is strongest in the course of the futures, and that the number of vessels entering the bone is greatest in that part.

The bones which compose the cranium are eight in number: the os frontis, or occipitis, two osa parietalis, and temporals, or sphenoides, and ethmoides. The six former are distinguished as proper bones of the cranium: while the two latter are said to be common to that cavity and the face. This distinction, however, seems very ill grounded; for the frontal bone has at least as much concern with the face as either the sphenoid or ethmoid bones.

The frontal bone forms the anterior portion of the bony cavity; the sides and upper part of the arch are formed by the parietal bones; the back of the skull, and part of the bafis, by the occipital bone; the lower part of the sides, and middle of the bafis, by the temporal bones; the sphenoid and ethmoid bones lie towards the front of the bafis.

Sommererring enumerates only seven bones of the cranium; as he joins the occipital and sphenoid bones together, under the term of os sphenoeoccipitale. They are indeed conflated into one piece about the sixteenth year.

The following futures join the different bony pieces, which form the cranium: the coronal future, connecting the frontal bone to the two osa parietalis, commences about an inch behind the external angle of the eye, and passes directly over the top of the head, to the same point on the opposite side. The sagittal future begins from the middle of this, and passes backwards in a direct line for about four inches, joining the two parietal bones; which are connected to the back of the occiput by the lamboidal future. This has its origin from the termination of the sagittal, and consists of two diverging portions, compared to the X of the Greek alphabet, whence the name of the future has been derived. These three are true futures; where the union is of the dentated or ferrated kind. Lately, the squamous future joins the upper portion of the temporal to the lower margin of the parietal bone.

The addition of the future squamosa, is a small portion of true ferrated future, extending from the squamous to the lamboidal; and uniting the posterior inferior angle of the parietal to the malloid portion of the temporal bone, where the junction of the occiput and parietal bone terminates; the former is connected to the posterior margin of the os temporo-
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poris throughout the whole of its sphenoidal and petrous portions, by a continuation of the lambdoid suture, called \textit{articulation lambdoidalis}.

The frontal bone (\textit{os frontis, or coronoide}) is so called from its comprising that part which we term the forehead. Its form has often been compared to that of a cockle-shell, to which indeed it bears an oblique resemblance. It is a \textit{semicircular} bone; \textit{i.e.} if it were divided into two halves, each portion would contain exactly the same parts; and the same remark holds good of the occipital, sphenoidal, and ethmoidal bones.


It conficts in the focus of two equal halves, which are joined, in the first view of life, by a future continued from the front of the \textit{cranium}, but which usually coalesce at a subsequent period. It happens not unfrequently that this \textit{frontal suture} continues through life, both in the male and female subject; and most commonly where the forehead is broad. A vestige of the former future often remains at the root of the nose.

This bone contributes to the formation of three cavities of the head; \textit{viz.} the \textit{cranium}, orbit, and nose. Hence it may be naturally divided into the frontal part; the two orbital portions; and the nasal part.

The \textit{frontal} portion includes by far the largest part of the bone. Its outer surface is convex, and the inner concave. Towards its upper, or rather posterior part, it forms a pretty regular semicircular margin, which being joined by the coronal suture to the \textit{os parietalia}, may be called the coronal edge of the bone. The frontal portion is everywhere smooth and uniform: except that, towards the lower and lateral part, some fine furrows are occasionally perceived from the course of blood-vessels, which communicate with the cranium. Towards the middle of the bone, and above the orbit, two superficial eminences may be observed, in the situation where the \textit{conflict} commenced in the focus (\textit{eminentia frontalis, tubera frontalis}) The anterior extremities of the front lobes of the brain correspond to these protruberances.

The \textit{frontal} portion is bordered below by two semicircular prominent ridges, which are immediately under the \textit{ethmoidal bone}, and are there called the \textit{superciliary ridges} or arches. These parts, as indeed the whole frontal bone, have a most important influence on the character and expression of the countenance. They constitute about one-third of the margin of the orbits. The two extremities of each superciliary arch form the angular procies; to the internal, which lies just at the root of the nose, the nasal procees of the superior \textit{maxilla} is connected. The external (\textit{profeces orbitales externus, or nasalis}) forms a considerable prominence at the outer angle of the eye, terminated by a rough serrated surface, to which a corresponding part of the \textit{os maxillae} is firmly attached. Behind it the bone is flattened, and indeed rather excavated, as it contributes to the formation of the temporal fossa. This temporal surface is bounded by a slightly prominent line, forming a part of that ridge to which the \textit{temporal fascia} is attached.

A prominence begins at the root of the nose, just within the superciliary arch, and runs upwards and outwards with a convexity accommodated to that of the arch. These elevations, which vary considerably in different persons, but are always larger in the adult, than in younger subjects, sometimes run into one prominence, but may be completely distinct. Their surface is usually irregular, and often displays numerous minute apertures. They denote the situation of the \textit{frontal sinuses}. The space left between these is called by later writers the \textit{glabella}.

The \textit{orbital} portion of the bone, which is smooth and concave on its under surface, is continued backwards and inwards, nearly in a horizontal direction, from the superciliary arch, and forms nearly the whole of the orbit, including its inner and anterior part, or rather perhaps on the superciliary ridge, a small and scarcely perceptible groove, or sometimes a little bone eminence (\textit{pinna trochlearis}) denotes the attachment of the cartilaginous pulley, in which the tendon of the trochlear muscle runs. The orbital plate forms towards its outer part, and just within the external angular or malar process, a fossicula or superficial depression, in which the lacrimal gland is lodged.

The \textit{nasal} portion of the bone commences just below the glabella, by forming a very rough denticulated surface, situated between the inner extremities of the superciliary arches, and sometimes denominated the nasal process. The \textit{os nasum} are most firmly implanted on this irregular surface. Directly behind this process, a vacancy extends between the two orbital plates, which is occupied in the entire cranium by the cribiform lamella of the ethmoid bone, and is therefore distinguished by the name of the ethmoidal suture. The bony plates, which form the side of this cavity, contain a series of small cells, which fit to similar cavities of the ethmoid bone. In front of these lies a part of large irregular openings, which lead to the \textit{frontal sinuses}. These cavities, which seem to have been first noticed by I. regner of Carpi, in his "Commentaria super Anatomia Mundus," (1721) are excavated in the lower and middle part of the frontal bone; and begin to be formed towards the end of the first year; but they are developed very slowly; as a flight of age only is perceptible even at the twelfth year. The two sinuses are separated from each other by a bony partition, which separates into two plates where there is a frontal future, and is often imperfect. They vary almost infinitely in their form, magnitude, extent, and connection with the ethmoidal sinuses; but in general extend over about two-thirds of the superciliary arch. The cavity communicates, by means of a funnel-shaped canal, formed of the os unguis, superior maxillary and ethmoid bones, with the upper and anterior part of the nose. These sinuses are covered with a delicate vascular membrane, the numerous blood-vessels of which secrete a watery fluid, that diffuses into the nasal cavity, moistens the Schneidersian membrane, and renders it more sensitive to the odorous properties of bodies. That they are subservient to the sense of smelling, and not connected with the voice, is proved, according to Blumenbach, by various facts in pathology and comparative anatomy; for a further discussion of the question, see Nissi.

We proceed to describe the inner surface of the os frontis, according to the threefold division already explained.

The frontal portion is divided throughout into two equal halves, by the attachment of the falx cerebi. In the situation of this attachment, there is a broad superficial impression (\textit{fossus frontalis}) at the upper or posterior part of the bone; this becomes narrower and more perceptible below: where its edges at last coalesce into a sharp edged bony ridge (\textit{pinna frontalis}) that runs down to the nasal process. The rest of the surface presents several grooves and impressions; \textit{viz.} there are some marks of the anterior branches of the sphenoidal arteries on either side of the bone; the convolutions
vulations of the brain mark the whole surface; and there are sometimes pits for the glandular pacchioni.

The convolutions of the brain leave the most conspicuous impressions on the orbital plates: these proceed support the anterior lobes; and as the bony subfascia rises into considerable pointed processes between the convolutions, while the substance of the bone is extremely thin, and almost transparent at other parts, its density is of course very various.

The following foramina are found in this bone, (a) F. supra orbitalis, or superciliare, (which indeed is more generally a mere sulci.) (b) supratemporal (c) F. orbitalis interna, or ethmoida, which are most commonly formed between the frontal and ethmoidal bones. The anterior, which is the largest, is occupied by the nasal branch of the ophthalmic nerve. The posterior, which is a smaller one, transmits the ethmoidal artery.

The sphenoid sinuses are formed into it; the corrugator supercilii is also attached to the same part. The temporal muscle arises from a small portion of the side; and the carotid is pulley of the oblique superior oculi is fixed towards the inner part of the ridge.

The parietal bones derive their name from the great share which they have in forming the sides or parietes of the cranium, of which they chiefly constitute the upper and lateral portions. As their edges form the fontanels, they are very commonly called the os occipitale: and are sometimes described under the term of o. verticis. They are very large bones, of an irregularly square figure, and very simple formation.

They are connected together by a straight line along the middle of the head (fagittal future) to the os frontis by the coronal; to the occiput by the lambdoidal; to the os temporal by the squamous futures; and lastly, to the sphenoidal ala by a squamous union. Hence they enter into the composition, by their four sides, of all the futures of the cranium, that are described under distinct appellations.

They are the only bones of the cranium formed from a single point of origination, and resemble in the form a thin convex shell. Their rounded corners confine the edges of the fontanels; and the ossa wormiana are found most frequently along the margins of these bones; particularly the posterior one.

Each parietal bone has four sides, and four angles. The former are named according to the futures which they form, the sagittal, coronal, lambdoidal, and squamous edges; of which, the first is the longest, and the three others decrease in this respect in the order of their enumeration. The three first form nearly straight lines, while the fourth is concave, and terminates in a thin falciform edge, overlapped by the squamous margin of the temporal bone.

The frontal, or anterior superior angle, is formed by the junction of the sagittal and coronal edges; the occipital, or posterior superior, by that of the sagittal and lambdoidal; the mastoid, or posterior inferior, which is the most obtuse, by the lambdoidal and squamous; the sphenoid, or anterior inferior, which forms a sharp-pointed projection, by the squamous and coronal edges.

The external surface of these bones is convex and smooth, like the frontal portion of the os frontis; from which the temporal ridge is continued in a gently curved line over the whole breadth of the parietal bone. Below this ridge, to which the temporal facies is affixed, the bone forms a large share of that flattened surface, (planum faciitunre) which affords origin to the fibres of the temporal muscle; and hence in strongly marked bones, the surface presents occasionally some converging impressions.

Their inner concave surface is marked by the convolutions of the brain; and has several considerable fovea on each side of the fagittal future; filled by the glandul ace pacchioni. Ramified grooves, in which the arteria meningea media, and its branches are contained, cover the whole vitreous table. The origin of these impressions is at the sphenoid angle, where they commence in a deep bone channel, which sometimes forms a complete cavity in the substance of the bone. A broad superficial sulcus, denoting the situation of the superior longitudinal sinuses, and the attachment of the vessel cerebri, is formed just under the fagittal future, and is therefore common to both bones. The mastoid angle is just touched by the lateral lunes.

The only openings are the two small foramina parietalia, one of which is placed on either side of the fagittal future towards its posterior part. A vein or artery passes through at this part to the dura mater. Frequently there is only one of these, and in many instances both are wanting.

The temporal is the only muscles whose fibres are fixed to this bone.

The occipital bone, (os occipitis) is a large, broad, and flat bone, convex on its external surface, like most of the other pieces of the cranium; and composing the posterior part of the cavity, together with a considerable share of the half. It varies, more than any other part of the cavity, in size and form. Its articulation with the atlas connects the basi occipitalis to the upper extremity of the vertebral column. On its inner surface the back of the cerebrum, the cerebellum, and the medulla oblongata rest; and the medulla spinalis quits the skull through an immense opening in its centre. To the outer surface are affixed the muscles, which move the head on the spine.

This bone, in its general form, resembles two triangles joined together by their bases: the posterior or upper triangular portion is connected to the two offa parietis by the lambdoidal future; the lower or anterior triangle is joined by the additamentum future lambdoidalis to the mastoid and petrous portions of the os temporal. The front extremity of this part is firmly connected to the body of the sphenoid bone. This union is effected by means of a layer of cartilage, till about the sixteenth year; after which time the bones grow together, and are consolidated by a bony union into one piece. Hence, Soemmering is justified in describing the two bones as one, under the name of os sphen-occipitale.

The os occipitis of the fagitus consists of four pieces, joined by cartilage; which at the end of the first year are very closely agglutinated; and soon after are consolidated by a bony union. These are: 1. The posterior, or occipital portion; 2. The two lateral, or condyloid; and, 3. The anterior, or bital parts. The margins of these may be named, according to the bones with which they are connected: thus, the edge of the occipital portion will form the posterior or lambdoidal margin; that of the condyloid parts, the middle or nuchalis; and that of the both, the anterior or petrous edge of the bone.

The substance of the bone varies greatly at different parts; it is thick, strong, and compact, at the external transverse ridge and upwards; where its surface, covered only by the scalp, is exposed to the effects of accidental violence.
The basilar portion of the occiput consists of a rough bony triangle, sometimes called, from its figure, the cuneiform process. Its outer, or rather under surface, presents several apertures from the attachment of the pharynx, and of the rectus capitis interni or anticus. On its inner or upper surface it is slightly concave; and has the pons varolii lying on it. On the line of union between this part and the petrous portion of the temporal bone, the inferior petro-occipital sinus leaves an impression varying in its dimensions in different subjects.

The foramina of the occipital bone are: 1. Foramen magnum occipitale. This, which is placed in the centre of the bone, and near the middle of the basis cranii, is sufficiently distinguished by its superior magnitude. Its figure is that of an oval, with the long axis running from before backwards, and the short one placed transversely. All the four divisions of the facial occiput contribute to this opening. It transmits the medulla spinalis, surrounded by a sheath of dura mater; the nervi accesorii, which are included in this sheath; and the two vertebral arteries. 2. Foramen laterale in basis cranii, or jugulare, formed between the condyloid portion of the occiput, and the petrous part of the temporal bone, the internal jugular vein, and eighth pair of nerves (consisting of its three portions; viz. the glossopharyngeal, nervus vagus, and accessorius) passes through this opening. A thin plate of bone generally separates more or less completely the passage of the nerve from that of the vein. 3. F. condylodii anterius, a round hole in front of the condyle, giving passage to the 9th pair of nerves, or n. lingualis medius. 4. F. condylodii posterius, which may be wanting on one or both sides of the bone. It is situated just behind the condyle, and sends a vein to the lateral sinus.

The occipital portion of the fronto-occipitalis, the trapzezius, splenius capitis, and sternocleidomastoideus are inserted in the external transverse ridge of the bone. The complexus fills a hollow just within the ridge. The two posterior recti, and the obliquus superior are fixed nearer to the occipital foramen. The rectus capitis lateralis, the recti anteriores, and the pharynx are also affixed to this bone.

The sphenoid bone, (os sphenoidium, from σφενος, a wedge, and σωμα, form; os cuneiforme, basilaris, polymorphus, multiformis, os psephorum) is placed towards the middle and front part of the basis of the skull, and detaches several processes, which give it a very irregular figure, and connect it in an intricate manner to all the other bones of the cranium, and several of the face: at some parts the contiguous bones overlap the edge of the sphenoid; while in other situations that bone is overlapped by the neighbouring ones: hence it is called to wedge, and hold firmly together, all the bones of the skull; from which circumstance its most common appellation is derived, and not from its bearing any resemblance in form to a wedge.

The Arabs called it os colatorii, or os cribratum, from the mistaken notion which prevailed for so many centuries, that the mucus of the nose flowed from the brain through its openings. The first physiologist who attempted to refute this long subsisting prejudice, who subverted the ancient error, and thereby threw a new light on a most important part of physiology and anatomy, particularly by delineating the true structure of the sphenoid bone; was

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The irregular figure of this bone renders it difficult and almost impossible to illustrate or explain it by any comparison: yet anatomists have likened it to a bird with the wings extended, and hence the names applied to some of its processes. In the fetus at full time, it consists of three pieces; the body or central portion; and two large lateral productions, which include the ala and pterygoid processes.

On its anterior part, the sphenoid bone is joined to the orbital plates of the os frontis, to the ethmoid bone, vomer, and os male. The extremity of this ala touches the anterior inferior angle of the parietal bone in the temporal fossa. The outer concave edge of the ala is extensively connected to the squamous and petrous parts of the temporal bone. At the back part it joins the basilar processes of the occiput. Lastly, the pterygoid portions of the bone are connected with the superior maxillary and palatine bones.

The body, which appears like a continuation of the basilar processes of the occiput, is the thickest part, and joins the ethmoid bone. It forms on its lower and anterior part a sharp lamina, which is connected above to the nasal lamella of the ethmoid bone, and passes below between the two layers of the vomer, under the name of the ayzyous processes.

A variety is very frequently observed in the formation of the body of this bone; which is the more remarkable, inasmuch as deviations from the ordinary structure in the brain, or in the bals cranium, in other respects, are of very rare occurrence. In some skulls the basilar processes of the occiput extend close to the posterior clinoid processes. In others, on the contrary, it terminates far short of this point; so that there is a peculiar oblique surface of the sphenoid bone, extending from the end of the basilar portion to the clinoid processes. Blumenbach proposes to distinguish this by the epithet of clivus (the declivity). This variation is so remarkable, that it changes completely the profile of the bone when viewed in a vertical section from behind forwards. Such a section represents a triangle in the former instance, and a pentagon in the latter. The upper side of this pentagonal figure is a line running from the posterior to the anterior clinoid processes: the second side forms the sharp edge on the front of the bone for the attachment of the septum nasi; the third is the part connected to the vomer; the fourth is the surface joined to the occiput; and the fifth is the above-mentioned clivus. When this formation exists, the fella turcica is deeper and narrower; and the space between the posterior clinoid processes and occiput is lengthened.

The upper surface of the bone is excavated for the reception of the pituitary gland; and the hollow thus formed is called the fella turcica. This cavity is bounded in front by a smooth prominence or tubercle, interposed between the two optic foramina, and supporting the conjunct portion of the optic nerves; behind by a thin perpendicular layer, which forms two rounded knobs, called the posterior clinoid processes; and it is open at the sides. The side of the body is excavated for the receptaculum, or cavernous sinus of the dura mater; and it bears a superficial impression made by the internal carotid artery just after it quits the canal of the temporal bone. The anterior clinoid processes have sometimes been continued backwards to the body of the bone, so as to form a complete foramen, through which the carotid artery passes: this continuation has been distinguished by the name of the middle clinoid process.

The body of this bone, with the exception of its clinoid processes, is formed into the two sphenoidal sinuses, which, in brain, ame and office, resemble those of the os frontis. These are separated by a vertical partition; and are open by round holes into the superior meatus of the nose. They are occasionally subdivided by bony lamina into smaller cells. Their lining resembles that of the frontal, ethmoidal, and maxillary sinuses; which has been described in the view of the os frontis: and, like all these cavities, they are not fully developed until many years after birth. Their openings appear smaller in the entire cranium than in the separate bone; as they are contracted in the former case by the cornua sphenoidales. These are thin triangular bony plates connected to the back of the ethmoid bone; and placed at the sides of the azygous processes, so as to diminish the apertures of the sphenoidal cells. Bertin calls them cornets sphenoidalera; Böhmer has delineated them in his Inhitutiones Osteologicae, tab. 4. figs. 5 and 7. And Sue, in his splendid edition of Mono's Osteology, tab. 8. figs. 3 & 4.

Each lateral portion of the sphenoid bone consists of three parts: 1. The lesser ala; 2. the greater ala; and, 3. The pterygoid portion.

The superior or smaller ala has a broad commencement from the front of the body of the bone; it runs outwards in an horizontal direction, and terminates in a sharp point; from which circumstance Mono has described it by the name of the tranverse spinous processes. Its anterior margin is joined by a future to the ethmoidal and frontal bones, while the posterior edge is just opposite to the commencement of the fissura sylvii, by which the two lobes of the brain are divided. The origin of this ala forms a somewhat thick knob, called the anterior clinoid process.

The great or middle ala of the sphenoid bone is continued from the body in the lateral direction, and forms a considerable portion of the orbit, with part of the temporal fossa; in which latter situation it terminates by a thin squamous edge connected to the frontal, parietal, and temporal bones. It may be italted, in short, to fill up the vacancy left between the three portions of the cranium. The superior orbital fissure separates it from the lesser ala. Beyond the termination of the latter processes it is joined to the os frontis by a broad surface; then towards its anterior and lower part to the os male; behind to the anterior inferior angle of the parietal bone, to the squamous portion of the os temporis by an extensive concave or semi-lunar margin, and, lastly, to the front edge of the petrous part of the temporal bone by its posterior margin. This last-mentioned portion, which contains the foramen ovale and spinosum, is called by Mono the spinous processes; it cannot however be considered as forming a process distinct from the great ala, of which it is clearly a part. From its under surface a sharp pointed process is continued, which gives origin to the levator palati; this is the pterygoid process, and apophysis pinniformis of different authors.

In its internal surface the great ala presents a large hollow, containing the convex anterior portion of the back lobe of the brain (the middle lobe of some writers). The bone is marked by the course of the spinous artery, and by the cerebral convolutions. The outer or temporal surface is the most extensive: it constitutes the lower portion of the temporal fossa, and is slightly concave. The anterior part is a smooth level surface, nearly of a rhomboidal figure; separated from the former by a sharp ridge, and constituting chiefly the outer and back part of the orbit.

Between this portion of the bone, which is often called its orbital processes, and the lesser ala, the superior orbital fissure (foramen lacerum orbitale; fissura sphenosphenoidalis) is left. The
The inferior orbital, or spheno-maxillary fissure, separates it from the os maiz.

Between the back of the great ala, and the adjoining petrous portion of the temporal bone, a rough and irregular groove is formed; which lodges the Eustachian tube.

The inferior ala, or pterygoid portion of the sphenoid bone, descends perpendicularly from the basis and greater ala, towards the superior maxillary and palatine bones. It consists of two thin plates: an external, which is broader and flatter, (limina maxilaris,) an internal, narrower, and longer one, (limina nasi,) forming the posterior opening of the nostrils, and terminating by a hook-like process (boumlirilum), round which the tendon of the circumflexus palati takes its course. The cavity left between these pterygoid plates (fossa pterygoidea) is occupied by the internal pterygoid muscle; and the fissure, which divides them from each other, is filled, in the entire cranium, by a process of the os palatine, whence it has been denominated fissura pterygo-palatina.

Foramina of the Sphenoid Bone.

1. Foramen opticum in the bafe of the lefier ala, and juft in front of the anterior chionid processes; for transmitting the optic nerve and ophthalamic artery. In very rare instances the artery has a distinct opening for its passage.

2. Superior orbital fissure (f. lacera) between the lefier and greater alae, this is largest near the body of the bone, and grows gradually fmalier. The third, fourth, ophthalmic branch of the fifth, and the fifth pair of nerves pafs through this opening; together with the ophthalmic vein, in its passage to the cavernous finus.

3. Foramen rotundum, behind the former, and near the body of the bone; for the passage of the fuperior maxillary branch of the fifth pair of nerves.

4. Foramen ovale, near the back part of the great ala. It transmits the inferior maxillary branch of the fifth pair.

5. Foramen spinosum, between the back-mentioned opening and the pointed termination of the great ala, tranfmits the artery of the dura mater. This aperture is fometimes formed between the sphenoid and temporal bones.

6. Canalis pterygoideus, or Vidian, formed at the root of the pterygoid processes, for the passage of a reflected branch of the fuperior maxillary nerve, of the fame name. Its anterior opening is much larger than the posterior, and cannot be seen in the entire cranium: the latter cannot be disco vera without difficulty; but it may be foon juft at the root of the internal pterygoideus plate, opening towards the broken anterior termination of the carotid canal.

There are other foramina found between the fphenoid and neighbouring bones, and which may therefore be called common holes.

1. A large irregular vacancy between the point of the petrous portion of the os temporis, and the fide of the fphenoid bone. A mass of casting fills this in the recent fubject. The carotid artery paffes juft over it within the cranium, and the Eustachian tube under it, without the cavity. The Vidian nerve enters the cranium by this aperture.

2. Inferior orbital, or osphen-maxillary fissure between the orbital portions of the sphenoid, upper maxillary, and malar bones. The infra-orbital nerve goes through this opening.

3. An opening between the body of the sphenoid, and the orbital process of the palatine bone. See the defcription of the latter bone. The following muscles are attached to the sphenoid bone: pterygoideus internus et externus, the latter of which arises from the root of the external plate. The circumflexus palati arises from a hollow at the commencement of the internal plate. The temporal muscle and levator palati are also attached to the bone.

The temporal bone (os temporum, crania,) constitute the inferior lateral portion of the cranium, and the outer middle part of the basis cranii. They contain the articular cavities in which the condyles of the lower jaw are received, and contribute to the formation of the zygoima. The organ of hearing is formed in their interior.

This bone consists of two pieces at the time of birth: the squamous portion, with the ring on which the membrana tympani is stretched; and the petrous portion. In a fucce of five months, or more early periods, the auditory ring is not conflated with the fquamous portion; to that the bone confits then of three pieces. It is often divided into three parts, in defcribing it in the adult: the anterior, the squamous, the majoid (which is a part of the former division in the fucce), and the petrous.

The temporal bone is joined to five others: 1. To the lower edge of the parietal by the fquamous future, and to the fuperior inferior angle of the fame bone by the additamentum future squamosi; 2. To the occipital bone, along the fuperior margin of its majoid and fquamous portions, by the additamentum future lambdoidea; 3. By the front edge of the petrous and fquamous portions to the fphenoid bone; 4. To the os male; and, 5. To the lower jaw, by means of a true joint.

The external furface will be defcribed firft, and then that which is placed towards the cavity of the cranium.

The fquamous portion is a broad flat piece, terminating in a thin femicircular margin, which overlaps the correponding edges of the parietal and sphenoid bones. The zygoima processes arises from its lower portion by a broad furface: this at firft flands directly out from the bone; but becoming narrower, turns forwards, and is joined by a rough furface to the os male, to complete the bony arch, under which the tendon of the temporal muscle paffes. The temporal falcia is affixed to the fuperior or fhap edge of the zygoima, and also to the prominent line, which, running backwards from the origin of this process, divides the fquamous from the majoid portion, and forms a continuation of the temporal ridge of the parietal bone. The fides of the maffeter muscle are affixed to the under edge of the bone. An oblong cavity is placed at the root of this process, (caeulis articulares, or glabeloida,) for the reception of the maxillary con- dyle. The position of this part is oblique; the outer end of the cavity being situated more forwards than the inner extremity: hence, if a line were drawn through the axis of the cavity on each side, the lines would meet at an acute angle, in the foramen magnum. In front of this pfeud cavity is placed an oblong convex furface, which is also included in the joint (articulatio articularis, tuberculum articula- tory.) Behind is a thin plane of bone, forming the lower and anterior part of the meatus auditorius externus, and separating that passage from the articular cavity: this is sometimes called the prococcus auditorius. It is distingufhie from the articular furface by the fiffura glaseri, through which the chorda tympani proceeds. The large round opening of the meatus auditorius externus is found juft behind the glenoid cavity: this passage will be more fully defcribed presently, when we speak of the organ of hearing.

The pofterior part of the bone, which is irregular on its furface, is distingufhed by a large prominence, called the majoid process, from a suppoied refeemblance to a nipple. This part is rounder or fatter, more pointed or obtufe, and more or less folid, in different fubjects. It is filled in- terally by numerous cells communicating with each other, and opening into the upper and back part of the tympanum. These cells are sometimes small and numerous; sometimes larger and fewer. The majoid process does not begin to
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be formed until long after birth. The inner surface of this process exhibits a deep notch, which contains the origin of the posterior portion of the biventer maxillae inferioris.

Beyond this process there is occasionally observed a large opening for the passage of a vein to the lateral sinus (foramen magnum, or capitale venosum).

Near the broad plate of bone which forms the lower part of the meatus auditorius externus, the flyloid process descends, arising as it were from a peculiar cavity, and surrounded at its root by the above-mentioned plate, as by an imperfect sheath; whence the term of procissus vaginalis has arisen. The flyloid process itself varies considerably in length; seldom, however, exceeding an inch. Its form is nearly cylindrical, its extremity is pointed, and it is generally straight; but varieties often occur in these points, as well as in the fize of the process. It is usually connected by cartilage to the bone, even in the adult state; but is consolidated at a late period of life. Separate portions of bone are often connected to it by means of ligament; nay, the ligament which depends from it to the cornu minus of the os hyoideus is sometimes converted almost entirely into bone, and appears as a prolongation of the flyloid process.

Between the flyloid and maffoid processes, but nearer to the former, is a round hole called the foramen flylophoidicum; this is the external opening of the aqueduct of Fallopian, through which the facial nerve passes.

A considerable excavation is formed in the bone near the root of the flyloid process, for lodging a dilated portion of the internal jugular vein; and this contributes to the formation of the foramen lacerum in bof cranii, or, f. jugulare, through which that vein, together with the par vacuum quits the cavity of the cranium. The passage of the nerve is separated from that of the vein by two projecting bony spines, which almost form a distinct opening.

The foramen caroticum, which is the entrance of the carotid canal, is a round hole placed towards the inner and anterior part of the last-mentioned opening. From this part the canal ascends first perpendicularly, for a very short space, and then is reflected at an obtuse angle forwards and inwards. Besides the internal carotid artery, the filaments which form the origin of the great sympathetic nerve pass through this canal.

We proceed to speak of the internal surface of the temporal bone. We observe here the extent to which this bone overlaps the parietal; which is often nearly half an inch in particular situations. The surface of the squamous portion is every where marked by the convolutions of the brain; and the bone is very thin between the eminences which rife in the intervals of the convolutions.

The maffoid portion is hollowed by a broad and deep channel containing the lateral sinus (sulcus sigmoides) and the maffoid foramen, or foramina, open into this channel. The veins which occupy these holes are the emissaria of Santorini.

A sharp ridge, to which the tentorium cerebelli is affixed, and on which a groove is discerned for lodging the superior petrosof sinus, divides the petrous part of the bone into two uneven surfaces; of which one is superior and anterior, and the other inferior and posterior. A very conspicuous convex eminence is placed on the former of these, and it denotes the situation of the superior femicircular canal. Towards the front and inner part of this prominence is placed a small hole, which enters the bone obliquely under a thin bony plate, and does not, therefore, come very readily into view, except in the separate bone. A branch of the Vidian nerve enters this opening to join the facial nerve: hence, it is very strange that Blumenbach states the foramen in question to be the internal opening of the Fallopian canal; which, on the contrary, is found in the meatus auditorius internus. (Befehlshabeug der Knochen, p. 129.) The carotid canal terminates towards the apex of the petrous portion by an irregular opening, which is completed in the recent subject by the attachment of the dura mater.

Just in front of this canal is a small opening, through which the Eustachian tube enters the tympanum. This is placed in the angle of junction between the squamous and petrosal portions, at the front of the bone. The cartilaginous part of the tube, previous to its entering this opening, lies in a kind of broken and irregular groove, between the under surface of the petrous bone, and the posterior margin of the great sphenoid ala.

On the posterior surface of the petrous portion there is found, in front of the fossa sigmoidea, an oblique slit of various appearance in different subjects; through which the aqueductus vestibuli paffes. Just over this is a slight indication of the upper end of the inferior femicircular canal. Still farther forwards is found a large opening leading into the bone, and appearing to terminate, on a superficial view, in a blind extremity. This, which is the meatus auditorius internus, receives the seventh pair of nerves, and will be more particularly described in the account of the bony organs of hearing. Just under this opening, and at the edge of the foramen lacerum, is a funnel-shaped cavity (apertura consisde, Soemmerring), at which the aqueductus cochleare terminates.

Between the margin of the petrous portion, and the bivalve processes of the occiput, a groove is formed of various magnitudes in different subjects; in which the anterior petrosal sinus lies.


The foramina of the bone are, 11. One in the fissa Glaseri, for the passage of the chorda tympani; 2. A part of the foramen lacerum in bof cranii; 3. F. caroticum; 4. F. flylophoidicum; 5. Meatus auditorius externus; 6. F. mastoideum; 7. Meatus auditorius internus; 8. Entrance of the Vidian nerve; 9. Passage of the Eustachian tube; 10, 11. Terminations of the aqueductus of the labyrinth; 12. A common hole between the point of the petrous portion and the body of the sphenoid; described in the account of the latter bone.

Description of the bony Part of the Organ of Hearing.

The petrous portion of the temporal bone contains the organ of hearing, which we shall describe at present, since it is formed by the bone. As this seems to be the most natural arrangement, it has, consequently, been adopted by the most approved modern anatomists.

Few parts of the animal body afford a more attractive object of minute investigation than the organs of hearing; both on account of the admirable structure of the parts, and from the great importance of their functions. Hence, they have been so minutely examined by several great anatomists for the last two hundred years, that we possess more accurate and detailed descriptions of them, than of any other part in the body.

The great and modest Fallopian was the first who opened the
the right path in this investigation: he discovered most of the important points in the structure of the inner ear; and has described them in his invaluable "Observationes Anatomicae," Venet. 1561, 8vo. Of succeeding writers, who have illustrated this subject in particular works, we shall enumerate those only who may be considered as classical authors. Enfaltachius, who indulged, indeed, too much in a spirit of jealousy towards his contemporaries and rivals, but seems almost to have been born for the purposes of anatomical discoveries, will stand first on the list. His "Epifola de auditus Organis," is contained in the "Opuscula Anatomica," Venet. 1564, 4to.; and the same subject is illustrated in some of his plates, which did not appear till the year 1714.

Great progress was made in developing the structure of this organ by the contemporaries of several eminent anatomists about the end of the 16th and commencement of the 17th Century. The first edition of Duverney's "Traite de l'Organe de l'Oreille," appeared in 1683; and it is contained in the "Oeuvres Anatomiques" of that author, which were not published till 1701. Mery opposed to this his "Description de l'Oreille," which came out with Lamys's "Explication Mechanique des Fonctions de l'Ame Sensitifin."

Vaifalva's "Tractatus de auris Humani," Bonon. 1704. 4to. is the produce of sixteen years' labour; during which the author examined more than a thousand crania. Yet he met with a rival in Virellis, whose "Traite Nouveau de la Structure de l'Oreille" appeared at Toulouse in 1714. He had, however, a more powerful defender in his illustrious friend Morgagni: who published Vaifalva's works at Venice in 1740, accompanied with 18 epistles of his own, chiefly relating to the ear. A German anatomist, the indefatigable Calbehoim, who had prosecuted the investigation with that perseverance industry which characterises the nation, had made greater progress in unfolding the structure of the ear, than either of the last-mentioned anatomists. His "Abbildungen des Menchlichen Ohrganges," Frankfort on the Main, 1786, contain a most elegant series of engravings, representing the anatomy of the whole organ with that minuteness and fidelity, which the well-known abilities of the illustrious author would naturally lead us to expect.

Beside the above-mentioned works, in which the anatomy of the whole organ is considered, there are several excellent treatises on particular parts of the subject. Meeckel's "Differtatio de Labyrinthis Auris Contentis," Argent. 1777; Scarpa's "De fenestra rotunda," Modena, 1772; and the "Disquisitio Anatomica de Auditu & Oblacu," Ticini, 1789, of the same author, are works of the highest merit: and the engravings in the last of these books are executed with unrivalled elegance. Much information may likewise be derived from the 4th book of Albinus's "Annuntiones Academicae;" from Monro's "Observations on the Nervous System;" and from Cothus's work "De Aqueductibus Auris Humani," Napolii, 1762.

The organ of hearing, as formed in the bone, consists of three divisions. First, the external portion, or meatus auditorius; which terminates at the attachment of the membrana tympani; secondly, the middle portion, or cavity of the tympanum; and thirdly, the internal portion, or laby-

**Cranium.**

The external circumference of this canal is formed of the rough bony plate, palling obliquely from without inwards and upwards, which separates the meatus from the glenoid cavity of the temporal bone, and a part of which forms the processus vaginalis. The external opening of the passage is the broadest part of the canal: its greatest diameter is in a line passing from the upper and anterior, to the lower and posterior part. It penetrates the bone in an oblique direction, being inclined inwards and forwards. The upper surface of the meatus is considerably shorter than the lower, in consequence of the oblique position of the membrana tympani, which closes the canal internally, and forms the boundary between the external and middle divisions of the organ. This membrane has its superior margin directed considerably outwards, and its lower edge turned proportionally inwards.

In the fetal state the membrana tympani is stretched on a bony ring, annulus auditorius; which is somewhat oval in shape, more or less deficient at its upper part, where it joins the squamous portion, rough on its outer margin, and grooved internally, for the attachment of the membrane. Its posterior portion is thinner and sharper than the anterior part; which is grooved above for the reception of the long process of the malleus. This ring grows gradually broader, particularly at its lower part; and it is generally conflated above to the temporal bone, before birth. The formation of the meatus proceeds, as the ossification of the skull advances; and it is completed about the age of puberty. This bony canal is therefore formed by a gradual increase in the breadth of the fetal annulus auditorius.

**Cavity of the Tympanum.**

This includes the space situated within the membrana tympani. Its surface is irregular, rough, and cellular in some parts. Its extent is much increased in the adult, by the formation of the malloid cells. Besides the three ossicula auditis, which are contained in this cavity, we meet with the following parts.

The fenestra ovalis, is an oval opening, situated in a depression near the middle of the cavity of the tympanum; and filled by the base of the flaps. Its upper margin is more arched, and the lower more nearly straight. It opens into the vestibulum.

The promontory is a considerable rising, just below the fenestra ovalis. It indicates the commencement of the cochlea; and has the fenestra rotunda, which opens into the cochlea, placed just under it. This opening is occupied in the recent subject by a delicate membrane.

Above and behind the fenestra ovalis is placed a prominence, indicating the situation of the anterior extremities of the upper and outer semicircular canals. In front of the same fenestra is a considerable groove, which forms the opening of a canal running obliquely forwards, close to the Euflachian tube, and holding the tenor tympani muscle. The opening of the Eufleachian tube itself is situated at the upper and anterior part of the tympanum. Just behind the fenestra ovalis is a very small hole, as if formed by the point of a needle, through which the thread-like tendon of the flap pedes comes out of the bony cavity in which the muscle itself lies. At some little distance towards the outside of the last-mentioned opening, and in the same horizontal plane with it, is another very small hole, leading to a canal, which terminates.
The malleiform cells open into the upper and posterior part of the tympanum. In the fossa, where these cavities are not yet formed, there is in the squamous and petrous portions of the bone, and therefore just over the tympanum: this forms in the adult the communication between the malleiform cells and tympanum.

The cavity of the tympanum contains the three ossea [or] osseous auditory meatus, or tympanum, of the epi- and mesotympanum, and of the malleus, incus, and stapes; which are distinguished by their diminutive size, and the elegance of their formation, and possess the important office of conveying the sound from the tympanum to the labyrinth. They are articulated to each other, connect the membrane tympani to the fenestra ovalis, and admit of being moved by three small muscles attached to them at different parts. They are the only bones in the body which acquire their complete size and form, and perfect ossification, before birth. Their structure is very constant on the whole, considered in their chief constituent parts; but variations in form are by no means unusual.

The malleus (which, together with the incus, was discovered about the end of the 17th century) has received its name from a supposed resemblance to a hammer. It resembles a short, knotty, and curved club; and is divided into the handle, the head, and two processes. The handle (murus) is closely attached, through its whole length, to the membrana tympani. The lower extremity of this part is placed about the middle of the membrane, which it draws inwards, so as to occasion a depression on the outer surface. At the upper end of the handle is placed the short process (processus obtusus) of the bone.

Rather higher than this process, there is a very slender sharp-pointed one, approaching towards the neck of the bone: it is called the long process of the malleus (processus longus). In young children it sometimes forms a very long, curved and bony spine. It rests in a groove of the annulus audito-rius, and often becomes anchyloled to that part in the course of years.

Run first discovered this part in the flat in which it forms a bony spine, and hence arofe the appellation of processus Raveianus. But the long process, as it is usually formed, was known long ago; (see S. Alberti "Hilifor phararumque pertium corp. hom." 1583. p. 84. & Fab. Hildanus "Die Furröfichkeit der Anatomie," 1624. p. 190.) It is also delineated by Folius in his "Nov. Auris internæ delineat." Venet. 1643.

The head of the malleus stands off from the handle at an obtuse angle. It forms a rounded eminence connected to the handle by a contracted neck. It lies opposite to the upper margin of the annulus audito-rius, and the articular surface, by which it is connected to the incus, is divided by a kind of groove into two parts.

The tenor tympani muscle is attached to the short process of this bone; and the externus mallei to the long processes. The laxator tympani (of the muscular nature which some entertain doubts) is inserted into the neck of the malleus.

The incus is shorter but thicker than the malleus; and its figure was compared not unaptly by Vefalus to that of a grinding tooth. It lies between the malleus and flapes, and is divided into a body, and two processes. The body of the bone forms an articular surface, with a middle eminence, adapted to the head of the malleus. One of the processes (the short leg of the incus) is shorter and broader; and flattened in its form. This is placed in the same line with the processus spinofus of the malleus; but is turned backwards. The other (the long leg) is more slender, and projects into the middle of the tympanum, where it lies nearly parallel with the handle of the malleus; the chorda tympani passing between them.

Most anatomists describe a fourth bone, under the name of os leucitare, or orbicular, as being placed at the end of this long process, just where it is articulated to the malleus. On this subject we agree with Blumenbach ("Beschreibung der Knochen," p. 144.) in stating, that careful investigation in the most natural and ordinary structure of parts will shew this supposed fourth bone to be nothing else than an epiphysis, and not indeed a constant one, of the long apophysis of the incus. It is often wanting, even in effusia andus, which are in other respects most perfectly formed. This fact has been ascertained by Blumenbach in the crania of negroes and North American savages. It can only be separated in the adult by the application of some force; and the surface has afterwards a manifesty broken appearance, when examined with the microscope. And when, on the contrary, as sometimes happens, a really separate bit of bone is found between the incus and flapes, this can be no more considered as belonging to the ordinary natural structure, than those other supernumerary ossicles which are occasionally met with in man and animals. (See Teichmeyer "Vindiciae quorum. invenire. Anat." 1727. Caffecbom "Tractat. 4. p. 55.

The third bone is the stapes (flapes, stapho), which is the smallest in the skeleton, but very elegant in its formation, and possessing a peculiar and determinate figure, from which it derives its ordinary and well adapted name. It was first discovered by Ingradallas ("Comment. in lib. Galeni de officinis," p. 57.) The situation of the flapes is horizontal, and it possesses a head, two crura, and a basis. The head is excavated into an articular surface for the long leg of the incus; and there is a slight prominence at its posterior part, denoting the attachment of the flapedus muscle. The anterior crus of the flapes is lighter, and consequently shorter than the posterior, which is thicker and more curved. They are both grooved internally, for the attachment of a membrane which fills the opening between them. The basi-flapes is exactly adapted in form to the fenestra ovalis, which it fills; hence the superior margin is curved, and the inferior straighter.

The Internal Division of the Ear, or the Labyrinth.

In a fetus of six, seven, or eight months, the labyrinth consists of a peculiar form, but thin and brittle bony substance, surrounded by an osseous matter, of a loose and spongy texture, which can be easily removed, so as to exhibit the labyrinth without much difficulty. The formation of this part is complete at the time of birth, like that of the ossicula andus; but the ossification of the petrous portion in general is not so far advanced; for the superior circu-ferential canal is distinctly visible in the basis cranii through its whole course; and there is a peculiar hollow within its curve, filled by a process of dura mater. The perilunar canal comes also partially into view at this time; as the ossification of the skull advances, the petrous portion becomes more compact in its texture, and surrounds the canals more completely; it is consolidated at last into a particularly hard and dense bone, and the labyrinth at that time, instead of consisting of a substance similar to that of the temporal bone, seems to have its cavities excavated in the hard
and almost impenetrable texture of the petrous portion. Hence the temporal bone of the fetus must be selected for the purpose of dissecting and examining the organ; and of making preparations of it.

The labyrinth consists of a vestibulum, or middle part; cochlea, or anterior; and three semicircular canals, or posterior portion.

The vestibulum, to which the fenestra ovalis leads, is a cavity of an elliptical form, in which two flight depressions are observable; an inferior and posterior one (fossa semilunaris,) a superior and external one (f. semilunatis,) which terminates towards the orifice of the aqueductus vestibuli. These two fossae are separated from each other by a sharp bony spine, with a denticulated extremity (the pyramis of Scarpa.)

There are seven openings into the vestibulum: viz. five from the three semicircular canals (one of the superior and posterior canal joining together, and terminating by a common orifice;) one from the superior scala of the cochlea; and one from the aqueductus vestibuli.

The cochlea is a convoluted bony tube, resembling externally a small shell; from which circumstance its name is derived. It consists of two turns and a half, its axis is directed downwards and outwards. The bafi or broadest part is turned towards the termination of the meatus auditorius internus; and the first or largest turn forms at its commencement the promontory of the tympanum. The canal of the right cochlea turns towards the right; while that of the left follows just the opposite course. The bony canal, like the tube of the snail shell, turns round a central bony column (modiolus, nucleus, or columella.) This is hollow for the reception of a large branch of the auditory nerve; and in shape it is funnel-like (esophus of Vieussens.)

The canal of the cochlea is divided through its whole course into two passages or scalae, a superior and an inferior one, by means of a most curious and artificially fabricated septum (lamina spiralis,) which terminates at the extremity of the organ in a small hook (bomulus.)

Where this septum is attached to the modiolus it is bony; but it possesses a membranous structure towards the constrictions of the tube. The offensive portion of the lamina spiralis consists of two very thin plates, between which the ramifications of the auditory nerve are expanded in the form of a frayed or net-like substance, to the fibres of which the bony plates are adapted. The branches of the nerve also leave impressions on the surface of the modiolus.

The lower scala of the cochlea terminates at the fenestra rotunda of the tympanum, and is therefore called scala tympani. The superior one opens into the vestibulum, and is distinguished by the name of scala vestibuli. Its aperture is just under the fenestra ovalis. The fenestra rotunda, which is closed by a thin membrane (tympanum semilunatum,) is the termination of the scala tympani. The membrane is attached to a groove, which is visible on the inner margin of the opening, and is also connected to the membranous portion of the lamina spiralis.

The three semicircular canals are distinguished, according to their situation, by the epithets superior, inferior, and exterior. One extremity of each canal is rather larger than the other, and forms a dilatation called the ampulla. The smaller ends of the superior and inferior canals join to form a common opening, which is placed just opposite the fenestra ovalis.

The aqueducts of the ear are two very minute canals commencing in the labyrinth, and terminating by orifices on the surface of the temporal bone. The aquaeductus cochleae begins in the scala vestibuli, and penetrating the bone, terminates by an expanded orifice just under the meatus auditorius internus. The aquaeductus vestibuli has its commencement just below the common opening of the superior and inferior semicircular canals, and terminates on the posterior part of the inner surface of the petrous portion, as mentioned in the description of the bone.

The meatus auditorius internus seen, on a superficial view, to terminate in a blind extremity. It is divided by a projecting bony ridge into two parts; an upper one, from which a canal commences, transmitting the facial nerve to the foramen stylomastoideum; the aquaeductus Fallopii. The other portion of the meatus gives passage to the filaments of the auditory nerve. We may observe in it a considerable depression, which is the bafi of the cochlea, and has therefore a convoluted spiral appearance; this is perforated through its whole extent with numerous foramina for the passage of those branches of the auditory nerve, which supply the cochlea; it is called by Scapa tractus spiralis foraminulentus. By the side of this spiral impression are some smaller foramina perforated in the same way for transmitting filaments of the auditory nerve to the ampulla of the semicircular canals; these are the macula cribrosa of Scapa.

The ethmoid bone, so called from ἑπόος, a sieve, and νοσ, form, is known also by the name of os cribiforme, and is described by Galen under the term of ἑσπορίφοιος, or the sponge-like bone. It is the smallest of the eight bones of the cranium, and remarkably light on account of its numerous cells; but derives considerable importance from its delicate and intricate structure, and from the circumstance of its containing the chief organs of smelling. It has been excellently described by Schneider in his small, but invaluable work, De òเคยCribriforme et fenüa ac Organe Odoratur." Watte, 1555. 12mo. which forms an epocha in physiology, as refuting the twofold error which had previously been universally received; viz. that the odorous particles ascended through the ethmoid foramina into the brain, and that the mucus of the nose descended from the same part.

It appears, on a superficial view, to consist of an irregular assemblage of thin bony plates, intercepting various cavities; and not to admit of illustration by comparison with any known object.

It may be most conveniently divided into three parts. 1. The cribiform plate: 2. The nasal plate, with the crista galli: 3. The intricate lateral portions.

The cribiform plate, from the structure of which the whole bone has derived its name, fills up the ethmoidal fissure of the os frontis. This, with the crista galli, is the only part of the bone visible from the cavity of the cranium. Its position is horizontal, and lower than the orbital processess of the frontal bone, between which it is situated. It consists of a thin plate of bone, perforated by several small foramina, which lead to the nose, and are so numerous as to have usurped the comparison to a sieve. The filaments of the olfactory nerve penetrate this plate, which varies considerably in length, breadth, and general figure. The small ganglia of the olfactory nerves lie on this plate, one on either side of the crista galli.

The crista galli, which is the thickest and strongest part of the ethmoid bone, projects longitudinally from the middle of the superior surface of the cribiform plate. It is situated towards the front of the bone; and is occasionally bent towards the right or left. Its superior edge is generally sharp, but sometimes obtuse. Towards the front it is united by two small procaces (apophyses alares) to the nasal portion of the os frontis, and thereby contributes to the formation of the foramen cecum.

The
CRANIUM.

The substance of the crista galli is generally occupied by medullary cavities; but it is occasionally formed into a hollow communicating with the frontal sinuses.

The nasal plate of the ethmoid bone is a thin, broad, generally flat, but sometimes curved lamina, descending perpendicularly from the middle line of the under surface of the cribriform plate into the cavity of the nose; where it forms the upper and anterior portion of the septum narium. It is connected in front to the nasal spine of the os frontis, and to the future, which joins the os nasi. Its inferior margin, which is thicker than the rest, and has a somewhat spongy appearance, rests on the cartilaginous portion of the septum narium; its posterior edge is partly joined to the vomer, and partly to the body of the sphenoid bone.

The lateral portions of the ethmoid bone, which, on account of their complex structure, have been called the labyrinths, may be divided into three parts. The concha narium; the cells; and the os planum, or papyraceum.

The concha narium, or os turbinalia, or spargisium (superior) are formed from a rough bony plate, having a spongy appearance, and placed parallel to the septum of the nose. Its superior margin is attached to the cribriform lamella, while its anterior extremity is connected to the nasal processes of the upper jaw. There is a deep depression on this plate running from before backwards, and dividing it into two portions; each of which has a spongy convoluted appearance, and has a convex surface opposed to the septum nasi, while it is concave towards the orbit.

The lower of these two portions, which is much the largest, constitutes the concha media (os turbinatum, or spargisium medium) of the nose. It hangs into the middle of the nasal cavity, and terminates by a convex unconnected margin, which runs longitudinally from before backwards. It has a more convoluted structure than the superior one. Its concave surface covers the meatus narium medius.

The upper portion (concha super. or Morghagniana; os turbinatum, or spargisium super.) is much smaller than the preceding. It terminates in a projecting convex edge, turned towards the cavity of the nose. The space left between them is the precingual part of the meatus narium superior. Some unimportant varieties occasionally occur in these parts, as a division of the upper concha into two smaller ones by a groove, &c.

The ethmoid cells or sinuses fill up the space between the conchæ and the os planum. They are partially exposed along the upper and outer edge of the bone; but are covered at this part in the pericranium by the edge of the orbital processes of the os frontis. The anterior cells are also covered extensively by the os unguis and the nasal processes of the upper jaw, and the posterior ones by the orbital portion of the os palati. The number and arrangement of these bony cavities is very irregular. They open moly into the superior meatus of the nose. The bony lamina, which divide them from each other, are the most delicate in the whole skull.

Just under the anterior cells there is a thin hook-like convoluted bony plate, connected to the cells or concha media, and extending backwards; it is called by Blumenbach processus uncinatus.

The cells of the ethmoid bone are covered towards the orbit by a thin plate of an oblong form, which, from its smoothness, has been termed os planum, and from its convoluted thinnest, os papyraceum. In conjunction with the os unguis, which is connected to the anterior margin of this plate, and covers the front cells of the ethmoid bone, it constitutes the inner surface of the orbit, the partition which separates that cavity from the nose.

The nasal plate of the ethmoid bone, the conchæ, and the cells are all covered by the Schneiderian or pituitary membrane.

There is no muscle attached to this bone.

Foramina of the Ethmoid Bone.

1. Numerous small holes in the cribriform plate, transmitting the elements of the olfactory nerve. These amount to two or three dozen. They are arranged, not indeed with perfect regularity, into two series; one of which includes the largest foramina, as Schneider rightly observed in his work "De oliv in cribriformi," runs by the side of the cribs galli, and conveys nerves to the septum of the nose; the other is placed, towards the orbit, and distributes the filaments, which are distributed on the surface of the two upper conchæ. These openings are the commencement of small and short canals, which run for various distances on the septum and conchæ, and terminate by open orifices through which the nervous ramifications come out to be distributed on the pituitary membrane of these parts. Some of these canals may be observed occasionally to reach as far as the lower edge of the middle concha.

Through a large opening in front, the nasal branch of the superior maxillary nerve, which enters the cranium through the anterior internal orbital hole, again quits that cavity.

2. Foramina orbitaria interna. See the description of the

3. Foramen caecum. os frontis.

Consequences of the Ethmoid Bone.

1. By its cribriform plate and cribs galli, to the orbital and nasal portions of the os frontis, and sphenoid bone; 2-5. By the nasal lamella, to the os sphenoid; and to the sphenoid bone; 6.7. To the superior maxillary bones in the orbit and nose; 8.9. To the os palati; 10, 11. To the os unguis.

In the fetus at nine months, the formation of this bone is very incomplete; as indeed is the whole organ of smelling. The septum and cribs galli are quite cartilaginous; ossification has scarcely commenced in the lateral portion of the bone; but the cribriform plate, which supports the large olfactory nerve is larger than the other parts.

Besides the well-known osteological works of Albinius and others, and the classical book of Schneider, which we have already quoted; much information concerning the structure of this bone may be derived from Santorini's "Obser. Anat.1" and from his pothiramous plates, edited by Girardi; from the 4th fasciculus of Haller's "Icones"; from the 6th of Morgagni's "Anatomia," and from the 2d book of Scarpac's "Annot. Anatomica," the plates of which are executed with unrivalled elegance.

Bones of the Face.

The bones which have been hitherto described form the cranium properly so called: those which follow, namely, the upper jaw with the bones connected to it, the lower jaw, and the teeth are included under the appellation of bones of the face. These are chiefly concerned in forming the instruments of mastication; but they contribute likewise to the cavities of the nose and orbits.

As these tend, when viewed altogether in relation to the bones of the cranium, to distinguish the head of man from that of other animals; so they are of great importance, when considered particularly, in influencing the natural or individual
individual form of the countenance. This will be more particularly considered in the general marks on the head at the end of this article.

These bones are generally distributed into two divisions: those which form the upper jaw, or the upper immovable share of the face; and the bone of the lower jaw.

The upper jaw consists of six bones, each of a thirteenth bone, which has no fellow, placed in the middle, and of sixteen teeth. The thirteen bones are, two _os nas_; two _os maxillae_, two _os palatini_, two _os turbinalia suprema_; two _os palatii_, two _os turbinalia infra._

The _os nas_ are placed at the upper part of the nose; the _os maxillae_ are at the internal angles of the orbits; the _os maxillae_ form the prominence of the cheeks; the _os maxillae_ form the sides of the nose, with the whole lower and the front part of the upper jaw, and the greatest share of the root of the mouth; the _os palatini_ are situated at the back part of the palate, nostrils, and orbit; the _os maxillae_ are seen in the lower part of the _naris_; and the _os palatini_ helps to separate these two cavities.

The bones of the face are joined to those of the cranium by the transverse suture which runs across the orbits and roots of the nose, and by the _situs_, the peculiar mode of connection of the vomer. They are connected together by sutures, like those of the cranium; but they have not such conspicuous indentations, and approach therefore more nearly to the mode of union called _harmonia._

The various sutures will be mentioned in describing the individual bones, which they connect. The lower jaw, which consists of a single bone, and has sixteen teeth implanted in it like the upper; is not joined to the other bones of the face; but is connected by a moveable articulation with the basal cranium. It is evident from the manner in which the upper jaw is joined to the cranium, that it can have no motion, except in common with the cranium.

The _os maxillae_, _os palatini_, and _os turbinata_ are by far the largest bones of the upper jaw, whence the name of _maxillarius_ has been appropriated to them. They serve as a basis or foundation, on which all the other facial bones rest, excepting the lower jaw. They are largely concerned in forming the cavities of the nose and orbit; they contribute also considerably to the cheeks and palate; and they contain the upper series of teeth.

Each superior maxillary bone may be divided into a body, and four apophyses or processes; _viz._, the _nas_; _zygomatic_; _alveolar_; and _palatine._

The body of the bone displays four surfaces or sides; _viz._, the _externai_ or _malar_; the _superior os orbital_; the _inferior or palatine_; the _internal_ or _nasal._

The malar surface is the most extensive of all. It commences below, by an arched or convex margin, just above which it has some slight eminences, (particularly towards the anterior part, where it acquires from this cause a fluted appearance,) from the situation of the fangs of the teeth. It terminates behind in a rough prominence, called the _infraorbital_, which, bifurcates the tracks and foramina of the vessels and nerves proceeding to the upper teeth, contains a muscular impression from the origin of the buccinator, and is marked off, together with the neighbouring malar processes, by the attachment of the malleus. The malar surface contains, towards the front of the face, a superficial hollow, called the maxillary fossa, in which the infraorbital canal opens, about a quarter of an inch below the margin of the orbit. Just over this a small future is observed, continued from the fisure of that canal. It terminates on its inner edge in forming a semilunar notch, which, with the excavation of the opposite bone, forms the heart-shaped external aperture of the nostril; in the middle and lower part of which a rough bony prominence is placed, called the nasal spine. Above this prominence commences the nasal process, which, growing gradually narrower, ascends between the _os nas_ and _unguis_, along the sides of the nose. It is convex on its outer surface, and slightly hollowed within. Its upper extremity terminates in a rough broken surface, attached to the internal angular process of the frontal bone. Its posterior and inner surface is marked by a deep groove; in which a part of the lacrymal bone and nasal duct is lodged.

The bony cavity for containing these parts is completed by the apposition of the _os unguis._

The _orbital surface_, which has a somewhat triangular shape, is continued towards its lower and outer part into the _zygomatic_ process; this is a broad surface having numerous depressions, and pointed eminences, by means of which it is firmly connected with the _os maxillae_. A groove appears towards the back part of the orbital surface, and gradually descends to a bony canal, called the _infraorbital_, hollowed out in the substructure of the bone, but displaining a fissure in that part of its sides which is towards the orbit. The infraorbital branch of the _os maxillae_ is hollowed out, and an artery of the same name from the internal maxillary, go through this canal, and come out on the face at the infraorbital foramen. In other parts, the orbital surface of this bone, which constitutes the whole inferior part of the cavity, is perfectly smooth. Its inner edge is joined to the _os unguis_, _os planum_; and _os palatii_; in front it has a rounded margin, forming a small part of the rim of the orbit; and towards the back part it constitutes, with the phephid bone, the inferior orbital fissure.

The palatine surface has an external elliptical margin, which forms the alveolar processes, containing sockets for eight teeth. This process is made up of an external and thinner, an internal and thicker, plate of bone; with transverse processes connecting these together, and thereby separating the different alveoli. The three front sockets, which hold the incisor and canine teeth, are nearly round in their form, and are simple cavities; that of the canine tooth is longer and deeper than any other. The two next alveoli, which hold the bicuspides, are rather flattened laterally, and divided towards their upper part into two flight hollows. The sixth and seventh, containing the first and second grinders, are the largest sockets, and are subdivided into three cavities; one of which is placed towards the palate, and the other two towards the cheek. The eighth is subject to great variety; and may be either simple, double, or triple. The posterior alveoli, and their septa, are much more pugny in their texture than the anterior ones.

As the use of the alveolar processes is merely that of receiving the fangs of the teeth, this part is not formed until after the teeth have appeared through the gum; it grows round the root of the tooth, in proportion as the body rises in the mouth. When these organs are lost, the alveoli are soon after removed, so that the jaw of an old person resembles, when all its teeth are gone, that of a young child, which has not yet got any. When a single tooth is lost, and the contiguous ones remain, the alveolus is not always absorbed; but the cavity is filled up by bone matter, as if the two laminae of the alveolar process had been pinched together, and united in a sharp line running between the two alveoli, which remain before and behind that of the lost tooth. The length of the face mult of course be most materially affected by these changes in the jaw; as we shall see.


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pain more fully in that part of this article which relates to the teeth.

The palatine portion of the upper jaw is concave, and very rough on its surface, where the arteries and nerves leave very manifest traces, being sometimes surrounded by complete bony rings.

Towards the front a small transverse fissure crosses the palate, and is lost between the incisor and canine teeth; hence a slight analogy arises to the intermaxillary bone of brutes. But there is this very obvious and important distinction to be observed; that no vestige of future can ever be traced in the human subject between the alveoli, much less on the upper and anterior surface of the jaw: so that the similarity to the structure of the quadruped is very remote. The fissure in question is more distinct in young than old subjects, and it is called by Blumenbach \textit{futura incisiva}. Although this has been overlooked by several modern anatomists, it was observed and accurately described by the great anatomists of the sixteenth century, Vesalius, Fallopius, and Columbus. It is also mentioned by Riolan (\textit{Anat. et phys.}, p. 649.) Galen has expressly enumerated an intermaxillary bone among the component parts of the human face; and Vesalius very justly inferred from this, amongst many other equally striking proofs, that the anatomical descriptions of that author, which had been universally received with the most implicit deference till that time, had not been drawn from the examination of the human subject. This attempt to refine mankind from error and prejudice drew upon him nothing but hatred and reproaches from his contemporaries, who were driven to the most absurd and unfounded arguments in defence of their idol, Galen. One of them suggested that an intermaxillary bone might have belonged to the human face in former times. See Jac. Sylvius \textit{de parte caudis et saeculi, variis et disparibus in Galeno}. The inner margin of the palatine surface is joined by the middle or longitudinal palate future to the corresponding part of the opposite bone. The posterior edge is united by means of the transverse palate future to the os palati.

The nasal surface displays: 1. A small sinus which covers some of the anterior ethmoidal cells. 2. Towards the front, a margin joined to the os nasi by the lateral nasal future. 3. A groove varying in depth, which lodges the nasal duct; this is sometimes almost a complete canal. 4. A rough line for the attachment of the inferior concha or turbinate bone. 5. A large irregular aperture leading to the maxillary sinus. Sometimes the superior margin of this opening forms cells, which join those of the ethmoid bone. The nasal surface is then continued into the floor or bottom of the nose, which is rather contracted towards the front. In the future, which joins it to the opposite bone, the inferior margin of the vomer is implanted. A rough prominence is formed at this part, with a groove in the middle \textit{(crista nasi-falci)} for receiving the vomer.

The maxillary sinus \textit{(antrum maxillare, or Highmore)} of which the rudiments may be perceived some time before birth, is the largest cavity in any bone of the head, and possesses a very irregular figure. The various surfaces of the upper jaw, which we have just described, are merely thin plates of bone forming the walls of the sinus. It is only separated above therefore by the orbital surface from the orbit: it extends behind to the tubercle, and rests below on the alveoli of the back teeth, which are separated from it by a very thin bony plate; nay, in some instances, the fangs of the teeth are visible within the sinus. The pockets of the three grinders, and two bicuspides lie under the sinus. It opens into the middle meatus of the nose; the aperture being much contrasted by the ethmoid, palatine, and inferior turbinate bones.

The substance of the upper jaw bone contains medullary cells in its thickest parts only; for instance, at the root of the nasal process, and just below the entrance of the nostrils, for the palatine arch is considerably extenuated towards its back part.

Canals and foramina of the superior Maxillary Bone.

1. Canalis infraorbitalis, and foramen infraorbitalis.
2. Foramen incisivum, or palatinum anterius: a round opening in the middle palate future, just behind the incisor teeth: it communicates by a small aperture with both nostrils. A small twig of the superior maxillary nerve, and some insignificant blood-vessels pass through it. The nose and palate sometimes communicate through this opening, while the bones are still covered by the soft parts.
3. Canalis lacrimalis.
4. Canalis pterygo-palatinus exterior, and foramen palatinum posterius; are formed between the maxillary and palate bones, and transmit the palatine artery and nerve.
5. Fissura orbitalis inferior; or sphen-maxillary fissure; a vacancy at the lower and outer part of the orbit between the sphenoid and upper jaw-bones. The infraorbital artery and nerve pass through this fissure.

The following muscles are attached to the superior maxillary bone: 1. Orbicularis palpebrarum, to its nasal process; 2. Obliquus inferior oculi to the front of the orbital surface; 3—5. A part of the masticator muscle, of the pterygoideus externus, and buccinator; 6. Levator labii superioris and alae nasi; 7. Levator anguli oris. 8. Nafalis labii superioris; 9. Compressor narium; 10. Depressor alae nasi.

Connections of the superior Maxillary Bone.

By the upper end of the nasal process to the os frontis, by means of the transverse future;—at the side of this process to the os unguiis by the lacrymal future;—to the os nasi by the lateral nasal future;—to the check-bone by the external orbital future;—to the os planum by the inner side of the orbital surface, by means of the ethmoidal future;—by the back of its tuberocity to the os palati by the palatoo-maxillary future;—by the posterior edge of its palatine lamella, to the os palati, by the transverse palate future;—to the opposite bone by the longitudinal palate future;—to the vomer, along the superior surface of the last-mentioned future;—to the inferior concha or turbinate bone;—to the teeth by gomphosis.

Superior Maxillary Bone of the Fatus.

In the fetus at full time this bone possesys the same general structure as in the adult; but its parts have a different relation to each other. It consists however of a single piece only. The length of the bone is much less than in the adult, from the different structure of the alveolar portion; and from the same cause the palate, which is considerably arched in the adult, is nearly on a level with the alveolar surface at this time. Hence the remarkable shortness of the face. The orbital surface and nasal processes are the most completely formed. There is, properly speaking, no alveolar processes; but six large cells, containing the rudiments of the teeth, are hollowed out in the substance of the bone. This occasions the external surface to assume a tuberculated appearance; which is most conspicuous in young fuctuses. The maxillary sinus is very small.

The os male, or cheek-bone, is generally called, in Latin, \textit{os jugale},
It possesses a somewhat quadrilateral figure with three thick and one thinner file; but the proportion of these margins to each other varies considerably.

It may be divided into three processes; the maxillary, orbital, and zygomatic.

The maxillary process is the broadest, and includes the whole of the thin edge, beginning near the infraorbital foramen, it runs downwards and outwards. It forms a very rough irregular surface, by which it adheres most closely to the zygomatic process of the upper jaw.

The orbital portion of the bone forms a smooth rounded margin, beginning from the front of the orbital surface of the upper jaw, running first outwards, and then turning upwards to be attached to the external angular processes of the frontal bone. It is continued for a short space within the orbit, where it joins the orbital surface of the great sphenoidal ala. Some anatomists distinguish three orbital processes in the os maxill ; a superior, which joins the os frontis; an inferior connected to the superior maxilla; and an internal continued inwards towards the cavity. It is the lateral plate of bone that separates the orbit from the temporal fossa, and which belongs only to the quadranunous mammalia besides man.

The zygomatic process pales backwards, to join that of the temporal bone, by means of an oblique future; which connects the process in such a manner, that the temporal bone forms most of the inferior margin, and the os maxilla the greater part of the lower edge of the zygoma.

The upper and posterior side of the bone, which is continued from the superior orbital process to the zygoma, and which is turned towards the temporal fossa, forms a sharp ridge for the attachment of the temporal fascia. The lower side, which runs from the maxillary process along the zygoma gives origin to the masseter, and hence acquires a very rough surface.

The inner or posterior surface of the os maxilla, which is concave, bounds the temporal fossa in front, and affords origin to the fibres of the temporal muscle.

A small round hole is observed about the middle of this bone, and sometimes there are even two or three such: a superficial branch of the superior maxillary nerve penetrates this foramen, and blood-vessels sometimes pass in this direction.

The zygomatic muscles, the masseter, and the temporal, are attached to the os maxilla.

The substance of the bone is thick, hard, and compact; including but little medullary structure.

Connections of the Os Male.

By its superior and internal orbital processes to the frontal and sphenoid bones, by means of the transverse future;—to the superior maxillary bone by the internal orbital future, within the orbit, and by the external orbital future towards the cheek;—by the zygomatic future to the temporal bone.

State of the Bone in the Fetus.

As the cheek bones are the chief means of uniting the upper jaw firmly to the cranium, their formation is considerably advanced at the time of birth. Their magnitude is considerable at this period, but their form changes afterwards. The orbital surface is large and conspicuous, while the facial and temporal portions are comparatively small.

The bones of the naso (os nasii, or nasi) fill up the vacancy left between the nasal processes of the superior maxilla and os frontis. When viewed together, their external surface is regularly convex, and they are concave behind.

They are thick but narrow at the upper part, much broader and thinner below, where they terminate in a sharp extended margin. We may notice in each bone an outer and inner surface, and four margins.

The external surface is gently convex and smooth. It has usually one or more small foramina, for the admission of nutritive vessels. The inner surface is proportionally concave, rough on its surface, and marked by deep veins of blood-vessels.

The superior margin, which is narrow, but very thick, presents a very rough surface, by which it is closely attached to the nasal processes of the frontal bone. Along the inner margin the two os nasi are united together by the middle nasal future. The gradual change in the thickness of the bone, from its upper to the lower margin, may be observed along this part of the bone. The nasal lamella of the ethmoid bone is usually connected to the os nasi, at their line of junction to each other. The external margin rels on the nasal processes of the superior maxilla. The lower edge, which is connected to the cartilaginous ala nasi, forms the upper part of the entrance of the nostrils.

The frontal muscle and compreessor narium are attached to this bone.

The connections of the bone have been sufficiently detailed in the above description. On this subject we have only to remark further, the immense strength of their attachment. Their arched form, and the broad rough surface by which they are joined to the os frontis, renders their position so secure, that no external violence could possibly drive them in; although their inner thin edge might be easily broken. The utility of this strong union is immediately apparent, when we consider that the delicate ethmoid bone, which the smallest force would demolish, is placed directly behind the os nasi; and if this were injured, the fragments would probably be driven in on the brain.

The form of the os nasi in the fetus is very different from that of the same bones in the adult. They are nearly square; the superior margin being of equal breadth with the inferior. Their size is considerable in proportion to that of the other bones; and their formation is more advanced.

The os ungui or lacrymale is the smallest bone of the face, of considerable delicacy and elegance in its structure, and may be compared to the scale of a fish.

It is situated at the inner margin of the orbit; connected above to the os frontis; in front to the nasal processes of the superior maxilla; below to the orbital portion of the same bone; and behind to the os planum. The future which joins it to all these is called by Monro the lacrymal.

It is not so large, nor completely formed in the embryo, as the os nasi; but its size and development are considerable, when compared with the other bones of the face.

It contributes by nearly its whole surface to the formation of the orbit; but the lower end of its anterior margin forms a small curved hook-like process (lamina), which afflicts in inclining the lacrymal duct.

The external surface of the os unguis is, on the whole, smooth; but it is divided into two unequal portions, by a prominent and very sharp ridge (crista longitudinalis), which terminates below in forming the above-mentioned hamulus.
The posterior division of the bone is the largest, and may be called the articular surface: the anterior or smaller portion, which forms a fossula, contributing to the bony cavity for lodging the lacrimal bag, forms the lacrimal surface of the bone.

The inner surface of the os unguis is concave, and does not possess the smoothness of the external; it is marked by a groove in the situation of the crista; and it covers the anterior portion of the ethmoid cells.

The substance of the bone is of extreme tenacity, so that it is broken with the slightest force; and it is often perforated by numerous small holes in its lacrimal portion, by which the membrane gains a more firm attachment.

The palate Bone (Os Palati).

This bone appears in the roof of the mouth like a small square portion placed behind the upper jaw; but it is considerably more extensive, being continued up the back part of the nostrils to the orbit: hence it afflicts in forming the two latter cavities, and in completing the bony arch of the palate. Its figure is so irregular, that it cannot be illustrated by any comparison; and it is so intricately connected to the surrounding bones, that to procure it separate and perfect in the adult plate is a matter of much difficulty.

It may be divided into four portions: 1. The square palatine plate; 2. The pterygoid processes; 3. The naso-lamella; and, 4. The orbital processes.

The palatine plate or processes forms a square and nearly level surface, occupying the vacancy left in the superior maxilla, and appearing like an uniform continuation of the palatal surface of that bone. Its superior surface forms the back part of the floor of the nose, and is smooth; the under surface is rather rough, but not to the degree which is observed in the palatine portion of the superior maxilla. The upper part of its internal edge rises in a spine, after the same manner as the palatine plate of the superior maxillary bone does, to receive the posterior part of the lower edge of the vomer. Its anterior edge is unevenly rugged, for a firmer connection with the palatine portion of the maxillary bone.

The internal edge is thicker than the rest, and of an uniform surface, for conjunction with its fellow of the opposite side. The posterior margin of the bone is slightly semicircular, according to the form of the corresponding portion of the velum palatinum; and when the two palate bones are joined, a middle projecting point is formed, from which the zygous uvula arises.

This palatine plate is well distinguished from the pterygoid processes by a perpendicular fossa, which, applied to such another in the maxillary bone, forms a palleus for the palatine branch of the fifth pair of nerves; the opening of the canal thus formed, on the palate, connotates the posterior palatine foramen. There is another small hole behind this, through which a twig of the nerve passes.

The pterygoid process (processus pyramidalis) is somewhat triangular, having a broad base, and ending smaller behind. The back part of this process has three fosse formed in it; the two lateral receive the ends of the two pterygoid plates, and the middle one makes a part of the pterygoid fossa: hence the pterygo-palatine fissure, which divides the two pterygoid plates of the separate sphenoid bone, does not appear in the entire cranium, where it is filled by this pterygoid processes of the os palati. The fornice of the palatine pterygo-palatine process is an irregular concave, where it receives the back of the great maxillary tubercle. Frequently several small holes may be observed in this triangular process, particularly one near the middle of its base, which communicate a little above with the openings before-mentioned, and transmits an artery or nerve.

The naso-lamella of the os palati is a broad, but extremely thin and brittle, bony plate, rising upwards from the upper surface of the external edge of the palate plate, and from the pterygoid processes. It is so weak at this part, and yet so firmly attached to the maxillary bone, as to be very liable to break in attempts at separation.

From the parts where the plate rises, it runs up broad on the inside of the tuberosity of the maxillary bone, to form a considerable share of the sides of the maxillary sinus; and to close up the space between the sphenoid and the great posterior of the upper jaw, where there would otherwise be a large slit, opening into the nostrils. A cross ridge is observed on the middle internal side of this thin plate, for the attachment of the back part of the inferior turbinate bone. On the outside of this plate the perpendicular foilla made by the palate nerve is observ'd.

At the upper part of the naso plate the palate bone divides into two processae, called orbitae; between which and the body of the sphenoid bone a hole is formed, transmitting a branch of the internal maxillary artery and superior maxillary nerve to the nostrils. Sometimes, however, this hole is proper to the palate bone, being entirely formed out of its substance.

The anterior of the two orbitae processae is the largest, and has its fore part contiguous to the back part of the maxillary sinus; while its upper surface appears as a small triangular point in the bottom of the orbit, behind the back part of the os maxillare and planum, difficultly discernible in the entire cranium, on account of its diminutive size and remote situation. It has cells behind, resembling those of the ethmoid bone, to which it is contiguous; and it is placed on the aperture of the sinus sphenoidalis, so as to have only a round hole at its upper fore part.

The other division of the orbitare portion is extended along the internal side of the upper back part of the maxillary tuberosity, to the base of the sphenoid bone, between the root of the processus zygous and pterygoid processae.

The palatine portion of this bone, and its pterygoid processae, are firm and strong, with some cancelli; but the naso plate and orbitare processae are very thin and brittle.

The circumflexus palatii, zygous uvula, and a portion of both pterygoid muscles are connected to the os palati.

Foramina, &c. of the Palate Bone.

1. Sphenoid-palatine, or pterygo-palatine notch, or opening; formed between this and the sphenoid bone for the transmission of nerves and vessels to the nose.

2. Pterygo-palatine canal commences from the last-mentioned notch, and receives the nerve of the same name from the second branch of the fifth pair. This canal is formed almost entirely towards the lower part in the substance of the os palati; but the superior maxilla contributes to it generally at its origin. It divides below into two canals, the largest of which (canalis pterygo-palatinus anterior, or major) opens at the posterior lateral part of the palate, close to the alveolar process, by the large posterior palatine foramen, the formation of which is allilded by the superior maxilla. The smaller pterygo-palatine canal opens on the under surface of the pterygo-palatine process; and the exterior ends between the latter processae and the alveolus of the dens papezianae.

The chief palatine nerve, and the palatine branch of the internal maxillary artery, come through the large canal: smaller twigs of nerve pass through the other openings. There is sometimes only a single opening.
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These canals and foramina may be seen in the treatise of
Mackel "De Quinto pare Nervorum," and in the second

Connections of the Palate Bone.

The palate bones are joined to the maxillary, at the fore-
edge of their square portions by the transverse palatine fur-
ture; by the thin nyal plate and orbital portion to the
same bone, by means of the palato-maxillary future; by the
pterygoid process to the sphenoid bone by means of the
sphenoid future; by the transverse ridge of the nyal plate to the
inferior turbinate bone. This union is frequently anchy-
loled in old skulls. By the orbital process to the os planum
and ethmoid cells, at the inner edge of its square portion,
to the opposite bone, by the longitudinal palate future, and
at the upper surface of the same part to the vomer.

This bone consists, in the tectum, of a single piece; but
its formation is incomplete. The orbital and pterygoid
portions are the most perfect at that period.

The inferior turbinate Bone (Concha inferior; Os spigosum
inferius).

This bone resembles very closely, in structure and shape,
that procès of the ethmoid called the concha media. Real-
dus Columbus was the first who ascertained it to be a dis-
tinct and separate bone, "De Re Anatomie," p. 58. Several
modern anatomists have however represented it as a procès
or appendix of other bones of the face; thus, Winlow de-
scribes it as a part of the os unguis; Santorini as a procès
of the os palatum, "Obf. Anat." p. 58; and Humæus as a por-
tion of the ethmoid bone, "Anatomie de l’Acad. des Sciences
de Paris," 1770, p. 270. As Fallopius had long ago con-

It happens, however, very rarely, that the inferior conchæ
is consolidated with either of the three bones. It might
more justly be regarded as a part of the superior maxillary
bone, with which it is sometimes ankylosed in the crania
of persons not advanced in years, and well formed in other
respects.

It is plac’d in the lower part and external side of the
roof, and has that irregular, spongy, convoluted surface
from which its names of turbinated or spongy bone are de-

erived. The name of conchæ has been given to it from a com-
parison to the shell of the fresh-water mussel (mya pere-
torun), which will indeed bear a resemblance to it, if we
suppose the shell placed longitudinally, with its long margin
below, the hinge above, and the convex surface towards the
feptom nari. The bone, however, varies both in fixa
form, and may sometimes be found in very elegant crania,
forming a sharp edge without the usual shell-like convexity.

It is attached chiefly to the upper jaw and os palati: some-
times, however, it is connected to the processus unci-
natus of the ethmoid bone, or by its upper and anterior ex-
tremity to the inner surface of the os unguis.

Ossification commences in these delicate bones about the
middle of pregnancy, at which time the cartilaginous con-
chæ pollicis throughout a loofe reticulated bony texture. In
the newly born infant their ossification is very complete.

The external surface of the bone is concave, and its in-
ternal convex. Three margins may be observed in it; an
anterior, a superior, and a posterior.

The anterior margin is the shortest, and terminates by a
smooth edge; it is placed obliquely on the inside of the up-
per jaw, near the root of the nasal process, and covers by
its attachment the termination of the nasal duct: its anterior
end reaches almost to the outer margin of the orbit.

The upper margin forms a thin hook-like lamina which
closes a considerable portion of the lower part of the open-
ing of the antrum, and reffs behind on the os palati.

The lower margin is the longest and thickest of the three;
very rough and spongy on its surface, and convoluted so as to form a convex edge. This covers the lower meatus
of the nose.

The vomer was first recognized as a distinct bone by
Columbus and Fallopius, "De Re Anat." p. 48. "Obf. Anat." p. 53; who gave it the name of vomer from its form. Velafius, on the contrary, defcribed it as an
appendage of the ethmoid bone, and he was followed in this
Petit in his edition of "Palmy’s Anatomy," Lieutaud and
Portal, "Anat. histologique et pratique de Lieutaud par
Portal," vol. i. p. 66. Vidos Vidus represented it as a
procès of the sphenoid bone.

With the exception of its superior margin, it forms a thin
and flat bony plate, and constitutes a considerable portion
of the septum narium.

It is connected above to the sphenoid and ethmoid bones,
below to the superior maxilla and os palati.

It has already acquired a considerable magnitude about
the middle of pregnancy; but its form in the newly born
child is very different from that of the adult. Its two
laminae are widely distant from each other in the whole
length of the upper margin, and they unite below, not to form
a sharp edge, but a flat surface. It does not posses the
rhomboidal form which it has in the adult, but is much
narrower and longer. In progress of time the two layers ap-
proach nearer together, and sometimes are completely con-
solidated, or they leave at least only a small vacuity in the
middle. It becomes at the same time broader, and acquires
a rhomboidal form, so that it posses four margins, viz. a
superior, inferior, anterior, and posterior.

The superior margin is the thickest and strongest; it
forms a deeply grooved surface, the sides of which form
two flattened plates. The vacancy left between these re-
ceives the accessory procès of the sphenoid bone, and the
corna sphenoidalia are connected to their margins.

The anterior margin is the longest, and generally has an
irregular spongy edge. Its upper part supports the nasal
lamella of the ethmoid bone; and on the front it is joined to
the cartilaginous portion of the septum narium, which is
often received into a kind of groove or fissure formed by a
separation of the bony lamina.

The lower margin represents the cutting edge of the
plough-flare, and is received into the groove of the creafa
nafalis formed at the junction of the superior maxillary and
palatine bones. Blumenbach states, that in cases of hydro-
cephalus internus, he has known this under edge of the
bone to be driven down by the mechanical pressure of the
accumulated fluid, so as to cause a fissure of the palate.
"Befreiung der Knochen," p. 221.

The posterior margin is sharp and even; it divides the
back opening of the nares into two halves, running oblique-
ly downwards and forwards from the sphenoid to the palate
bone.

The lower jaw bone (maxilla inferior; mandibula) is by far
the largest and strongest of the bones of the face. Its re-
semblance in form to a horse shoe is well known. It is
connected only to the temporal bone by means of an arti-
culation.

This bone, as Veñalus long ago observed, is shorter in
man than in any other animal. Yet the elephant would,
perhaps, form an exception to this rule, as the bone there
seems to be really as short as in the human subject. It ap-
ppears remarkably large, comparatively speaking, in animals
of the monkey kind, even in such genera as are on the whole most anthropomorphous.

Its effloration commences at a very early period, and it has attained a considerable magnitude in favour of the fore- and hind leg, third month after conception; but its form at this period differs much from that which it possesses subsequently. In the fleshy, and in the newly born child, it consists of two distinct halves, which are connected by a cartilaginous symphysis at the chin. On account of the want of teeth it is very narrow, particularly at the sides. Its substance is hollowed out into large bony cavities, which hold the rudiments of the future teeth. The synchondrosis of the chin becomes firmly ossified in the first month after birth. In proportion as the temporary teeth make their appearance, the form of the jaw, confining of a single piece of bone, becomes more and more developed. The changes of its form, &c. will be more fully considered in that part of this article which relates to the teeth.) In most animals, on the contrary, the lower jaw consists throughout life of two separate pieces joined by a mere synchondrosis, which is destroyed by boiling or maceration.

The lower jaw bone may be divided into the arch-like body, and into the two lateral prolongations (rami) which ascend from the extremities of the arch towards the basis cranii.

The body of the bone includes the chin, and two lateral portions, which run backwards to the rami. The former part constitutes nearly a square piece in the front of the jaw, in the cranium of a strong and well-formed man; and the lateral portions are continued backwards from this at an obtuse angle. This square form of the chin is particularly observable in the negro. But very frequently the bone forms a regular curve or arch at this part; and sometimes the chin has almost a pointed appearance. The part, where the synchondroses exist in the fetus, is still called the symphysis of the bone. The name of body is applied to the inferior edge of the jaw-bone; extending from the chin in front to the angle, or part at which the rami commences.

The superior margin of the body is formed into an alveolar process, resembling in its structure the same process of the upper jaw. The front surface of this process, which lodges the incisor and canine teeth, has generally a flat appearance, as it is moulded to the fangs of those organs. The form of the alveolar margin does not exactly resemble that of the superior maxilla, as it is contracted in front; whereas the other forms a regular arch. The front teeth of the lower jaw are smaller than those of the upper, by which they are overlapped; and hence arise the difference in the outline of the two parts. The outer plate of the alveolar process is the thinnest, as in the upper jaw; but an exception to this observation occurs in the sockets of the second molaris, and dens fapientiae; and particularly in the latter, which is almost covered externally by the coronoid process.

On the forepart of the chin there is a slight longitudinal ridge in the middle, on each side of which the bone is depressed to contain the depressor labii inferioris, and levator menti; and below a small uting may be observed, where the depressor originates. On the middle and back part of the chin, one or two more or less prominent pointed protuberances are observed (spina maxillaris interna), to which the genio-glosso and genio-hyoidi are affixed. Below these are two rough sinuities denoting the attachment of the biventer maxillae inferioris.

At the lower and forepart of the outer surface of the lateral portion, a small eminence may be observed, where the depressor labii communis arises. Above this, at about the mid-distance between the alveolar processes and basis is a round hole, called the foramen mentale, which transmits an artery and nerve of the same name. The posterior alveoli are separated from the root of the coronoid process by a small groove (fossa oblonga), close to which is a rough line for the attachment of the buccinator muscle.

An oblique impression from the origin of the mylohyoides may be noticed on the inner surface of the bone: it commences just within the socket of the dens fapientiae, and runs obliquely downwards and forwards.

The end of the base of the jaw, where it turns upwards at an obtuse angle towards the cranium, is called the angle of the bone. And the ramus includes the whole broad and flat production which is continued towards the skull. The masticating muscle covers the whole external surface of this part: but the strongest impressions of its attachment are observed just on the angle of the bone. The corresponding portion of the internal surface is marked in the same way by the pterygoideus internus.

The ramus of the jaw terminates above in forming two processes. The anterior of these, which is flattened at the sides, sharp-edged, and pointed, is called the coronoid; it has the tendon of the temporal muscle inserted in it, and passes just within the zygoma.

The posterior process, or condyle, terminates in an oblong smooth head, which is articulated to the temporal bone; and supported on a smaller part or neck. The condyle, whose greatest length is transversely, and whose convexity is turned forwards, is covered with a cartilage, as the articulated parts of all other moved bones are. The posterior sharp edge of the coronoid process is continued into the front of the condyle, near its outer extremity; forming a semilunar vacancy between these two parts (incisura signoidea). The inner and forepart of the condyle is a little hollowed out and rough to receive the insertion of the pterygoideus externus. The direction of the condyle is not exactly transverse with respect to the cranium; but its axis passes obliquely from without, inwards and backwards; so that the outer extremity is placed rather further forwards, than the inner end; and hence these eminences are adapted to the articular cavities of the temporal bone.

A large irregular hole is found about the middle of the inner surface of the ramus; this leads into a canal hollowed out in the substance of the bone, and running under the sockets of the teeth, as far as the foramen mentale, where it opens externally. From this point, however, a smaller canal is continued under the alveoli of the front teeth. A large branch of the inferior maxillary nerve, accompanied by the inferior maxillary artery, and its corresponding vein, run in this canal. The chief portion of the nerve comes out again at the foramen mentale, together with a minute twig of the artery; and a small branch of each enters the canal under the molar teeth. A groove is observed on the inner surface of the bone, commencing at the origin of the canal, and running forwards; sometimes there is a complete bony tube for some distance. It holds a branch of the inferior maxillary nerve.

The surface of the lower jaw is hard and firm, except at the spongy sockets; where, however, it is stronger than the upper jaw. Its internal substance is cellular, without any solid partition between the cancelli in its middle. At the base, especially of the chin, where this bone is most exposed to injuries, the solid fides of it are thick, compact, and hard.

The following muscles are attached to different parts of the lower jaw-bone: depressor labii inferioris; depressor anguli oris; levator menti; platysma myoides; masticator; temporalis; pterygoideus externus et internus; biventer maxillae.
maxillary; mylohyoid; geniohyoid; genio-glossus; buccinator.

The joint of the lower jaw with its motions, will be considered under the article Mastication.

Of the Teeth.

Parts common to all the Teeth.

Each tooth consists of three parts; the body or crown, which appears through the gum in the cavity of the mouth; the root or fang, which is lodged in the alveolar procera; and the neck, round which the gum adjoins, dividing the two first mentioned parts from each other. Every tooth has an internal cavity, which extends nearly the whole length of its bony part. This opens or begins at the point of the fang by a very minute aperture: it grows larger in its passage, and terminates in the body of the tooth, where it is the largest of all. This latter part is exactly of the shape of the body of the tooth to which it belongs; and, indeed, it may be flatted in general terms, that the whole cavity is nearly the form of the tooth itself, larger in the body, from whence it gradually diminishes to the extremity of the fang. Where the tooth has only one root, the cavity is simple: in others, each fang has its own hollow, which opens into the common excavation in the body of the tooth. This cavity is not cellular, but smooth on its surface; and is filled with a soft membranous and pulpy substance, which is made red by injection, and probably receives branches of the nerve, as it is expiectedly sensible, when exposed by decay of the tooth. The blood-vessels, when injected, can be traced through the whole cavity; but it is difficult to pursue the nerves even to the point of the fang. The surface of the crown of the tooth is the only bone in the body not covered by perioctum. The fang is, however, invested by a membrane of this description, from the neck to its extremity. This, though very thin, is vascular, and appears to be common to the tooth which it encloses, and the pocket, which it lines as an investing internal membrane. At the neck of the tooth, it is attached to the gum.

Connection of the Teeth.

The fangs of the teeth, implanted in the alveoli of the jaws, are compared to nails driven into wood; and hence the mode of union is called gomphosis (from gompho, a nail.) By the adhesion of the above-mentioned perioctum, and of the gum, and the close connection of the alveolar procera, the teeth are for the most part retained in their situation in the living subject, that they can only be separated by considerable force. When, however, the soft parts are destroyed by macerating the cranial, those teeth, which have only one fang, drop out; while such as possess two or three diverging roots, are retained in their situation.

The Gums.

The alveolar procera are covered by a red vascular substance; called the gums. This is perforated by as many openings as there are teeth; the necks of which are covered by the closely adhering sides of the apertures. The external and internal gums are united by transverse fleshy partitions, which are higher than the other parts of the gum, and thence form an arch between every two adjacent teeth. The thickness of that part of the gum, which projects beyond the sockets, is considerable; so that when it shrinks from the tooth by disease, or may be destroyed by boodage or maceration, the tooth appears longer, or less sunk into the jaw. The gum adheres very firmly, in the healthy state, but to the alveolar procera and to the teeth, but its extreme border is naturally loose all around the teeth. It approaches, in its substance, to a kind of cartilaginous hardness and elhility. It is very vascular, so as to be rendered quite red by minute injection; yet it does not seem to possess any great degree of sensibility. For, though we often wound it in eating, and in picking the teeth, much pain is not felt on these occasions; and both in infants and old persons, where there are no teeth, the gums bear a very considerable pressure without pain. The advantages arising from this insensibility are obvious; for, till the child has cut its teeth, the gums must perform their office, and be considered as free from the painful action of the incisors. When they are formed by having a hard ridge running through their whole length. Old persons, who have lost their teeth, have not this ridge. As the gums are not easily irritated by wounds in a bound state, they are not so liable to inflammation as other parts, and soon heal.

As the teeth are united to the jaw by the perioctum and gums, they have some degree, of yielding motion in the living body. This circumstance probably renders them more secure; as by breaking the jar of bony contact, it may prevent fractures both of the sockets, and of the teeth themselves.

Component Parts of the Teeth.

These organs are composed of two substances, differing considerably in their structure and appearance, and existing in very unequal proportions.

The crown of the tooth is furnished with an exterior coat or crust of a substance, called enamel (zahllantia vitrea, cor- tex friturus), which terminates at the neck. This, which in texture and appearance resembles the porcellaneous shells, is the hardest substance in the whole body. It is of a whitish colour, smooth, or as it was high polished on its external surface; and possessing a kind of semi-transparency in the living state, which is afterwards lost. It presents, on a fracture, a regular fibrous and crystalline appearance; but, in other respects, its texture is homogeneous. It differs so clearly in its colour and structure from the substance which it covers, that, in whatever direction the crown of a tooth be divided, a sharp line, defining the limits of the two parts, can be very readily distinguished. The exterior crust of enamel is thickest on those parts of the teeth, which are opposed to each other in mastication; that is, on the cutting edges of the incisor teeth, and the grinding bases of the quadrants. It grows gradually thinner and thinner towards the gums; it is also generally rather thicker on the outer than on the inner surface of the teeth, particularly in the incisors. The fibres of the enamel, generally speaking, have the direction of radii proceeding from the centre of the tooth; but, near the gum, they become inclined towards the surface of the bony part.

The hardness of this substance is such, that it will strike fire with flint, provided the metal be good, and the surface of the enamel broken. It can only be divided by means of a file, as faws, even of the finest structure, do not affect it; and even files are soon worn smooth by it. When exposed to the action of fire, it becomes slightly discoloured, cracks, and flies off from the bone.

No pain is occasioned by filing, perforating, or eroding the enamel in the living subject; nor is there the slightest appearance of reproduction, when it has been partially destroyed or removed.

It acquires a temporary tinge by eating fruits, which have highly coloured juices, as mulberries and black cherries; for it seems, like all other calcareous substances, to attract colouring matters strongly. In this way some people tinge their
their teeth with particular colours, according to their notions of elegance; as the Javanese, and inhabitants of the Pelew islands.

The possibility of imparting an artificial colour to the teeth, ab externo, a circumstance of considerable importance in the physiology of these organs, has been abundantly proved by the experiments of Mr. Moor, an ingenious surgeon dentist, and lecturer on the teeth, in London. He imbibed them in different coloured fluids, such as ink and bile, and found that their sublimation became tinged throughout. He has found also that oil penetrates them completely, so as to render them transparent.

It is not altogether decided, whether or not the enamel of a growing tooth receives any tinge from feeding the animal with madder; but if it does, the effect is certainly much less than that produced on the bony part. When, however, the enamel is formed, it certainly is not affected by mixing madder with the food, except on the external surface, which becomes stained by maceration. (Blake's Effay, p. 132—135.)

Chemical Composition of the Enamel.

Enamel consists of phosphates and carbonate of lime, and to a very small proportion of animal sublimation: hence, when immersed in muriatic or nitric acids, it is dissolved with a rapid effervescence, occasioned by the liberation of carbonic acid gas. Sulphuric acid seems to have no action; but in the course of an hour, small bubbles are perceived; and in twelve hours the enamel bursts, cracks, and separates, accompanied with an evident formation of selenite by the action of the acid on the lime. Distilled vinegar has a very trifling effect, but operates more powerfully when concentrated.

There is a slight flocculent appearance, after dissolving the bony part of the enamel in dilute nitrous acid, arising from the small proportion of animal matter which belongs to this sublimation.

The constituent ingredients of the enamel are stated by Mr. Pepys to be in two parts: phosphate of lime 78, carbonate of lime 6, water of composition 16. Should not the latter be rather considered as an animal sublimation?

The employment of acids in the living subject will impart a very white colour to the teeth; but it should never be referred to, as it is extremely injurious by dissolving the enamel. Cream of tartar (aciddulam tartare phialis), contains an excess of the tartaric acid, exerts this destritious solvent influence; so that a tooth imbibed in it for twelve hours became very rough. (Blake's Effay, p. 157.) Yet it is not an unnatural ingredient of dentificere. These powders ought never to pose the chemical properties; which must indeed be completely alleviated, if the proper attention be paid to brushing the teeth every morning. For the same reason, perfumes which take nitrates or other acids medicinally, should be drawn into the mouth through a glass tube. It is in the same way, by a flight action on the enamel, that eating large quantities of fruit tends rather to whiten the teeth.

The enamel sometimes seems to be deposited irregularly on the surface of the tooth, producing the appearance called honeycomb teeth. It has been ascertained by Mr. Moor, that this arises from inequalities in the bony part, over which the enamel is deposited. Such teeth are more liable to decay than others. Sometimes, however, we see spots, in which no enamel has been laid down, and which appear black from crannies of the exposed bony part; and the colour of the enamel itself sometimes deviates partially from its ordinary appearance.

The use of the enamel must appear very elenently from the above description of the sublimation. It opposes a hard and almost indestructible surface to the action of the food which we masticate. It is, however, at last worn off from the opposed surfaces of the tooth, by the long continued and constant employment of these organs in chewing. And when this takes place, the bony sublimation is much more rapidly destroyed; so that the surface of the tooth becomes concave, in consequence of the external crust of enamel refining the triturating longer than the bony part. The enamel is also much less prone to caries than the offensive sublimation of the tooth.

Bony Part of the Tooth.

The whole body, with the exception of its exterior surface, and the entire fang, are composed of what is called the bane of the tooth.

The term bone of the tooth is here employed in compliance with established custom, which has arranged the teeth among the bones of the body, and generally induced anatomists to describe them with the bones. The general resemblance which they bear to bone, particularly in the hardens of their texture, and in the nature of their constituent elements, has probably led to this arrangement. There are, however, so many differences in structure between these parts, that we should be fully warranted in affirming that the teeth are not bones. The proofs, by which these organs are formed, are also so entirely different from the formation of bones, that the term ossification is certainly very improperly used, when applied to the development of the teeth, and could only lead us to form erroneous conclusions. To persons who have not considered the subject minutely, these remarks may appear rather paradoxical. Yet we may repel this charge by observing that other anatomists have considered the subject in the same point of view. Eyslon, who published some observations on the bones of children, in the year 1699, has the following very just remark: "Pudquam dentium procreatione longe diversa est ab ossium generatione, liquide siliquae sunt per intercostiones cartilaginum, dentes ex conversione mucoris in dentium sublimantium, opnior dentem non esse a. fed proprium aliquod corpus effici, datur, candidum, solidum." (Treats Anatomica-melchis de Officinis Infantium, Groningia, 12mo. p. 188.) To this we may add the decisive opinion of one of the ablest anatomists of the present day. I allude to Cuvier, the learned secretary of the French national institute. "We may," says he, "safely affirm, that it is very improperly that several anatomists have given to the internal sublimation of the teeth the name of cellular substance; and equally improperly have they given the name of ossification to the operation which develops and hardens them. This is to confound two things essentially different, and to give, by ill applied names, false ideas, which may even have an influence upon practice." (Philosophical Magazine, vol. xxviii. p. 264. from the Memoirs de l'Institut National.)

This is much less hard and brittle than the enamel; but it is more dense and compact than any other bony sublimation. It is more inclined to a yellow colour than the enamel; and this is particularly observable towards the fang, where it is often at the same time semi-transparent like horn, and softer in its texture. This is described by Blumenbach as a third sublimation of the tooth, by the name of sulfaustia cornea. (Beschreibung der Knochen, p. 244.) Its texture has a
fibrous appearance, and it is susceptible of a very high polish.

It differs from other bone, in never containing any medullary cells, nor indeed any reticular texture, however large the tooth or its cavity may be.

It consists of the same earthy substances with those that belong to the enamel; but they are united to a much larger share of animal matter. The latter constituent exists in the teeth in such abundance, that although their earth be dissolved by acids, the form of the teeth is still retained by a firm cartilaginous substance, which remains. This residue is indeed more dense than that of other bones.

The different proportions of animal matter, contained in the enamel and bone of the tooth, are beat shewn by the common method of exhibiting the arrangement of the former substance on the tooth. Let a section of the tooth be made in any direction, and burn the cut surface; then wash it with a weak acid. The bone is perfectly blackened by the action of the fire on its animal matter, while the enamel, containing almost entirely of earth, retains nearly its original whiteness.

According to Mr. Pepys, the bone of the tooth consists, in 100 parts, of 64 parts of phosphate of lime, 6 of carbonate of lime, and 20 of gelatine. The remaining 10 he sets down as waste of composition and loss.

The existence of fluoric acid in the teeth has lately been announced by some of foreign chemists; but the fact of its existence, as a component part of these organs, is not yet definitively ascertained. Sig. Morichini of Rome discovered fluoric acid in the first tooth of an elephant; and thence was led to examine that of the human incisive. He finds that 100 parts of it contain 50 of animal substance, and 22 of flint and phosphate of lime. He supposes the phosphoric acid to be in very small quantity. They contain also some magnesia, alumine, and carbonic acid. The very small proportion of earthy matter, and the large quantity of animal substance, which this analysis affirms to the enamel, differ so much from the results obtained by other chemists, that the accuracy of the experiments must incur suspicion. Mr. Brande could not discover any fluoric acid in the enamel. He powdered it, and subjected it with sulphuric acid to the action of heat; but its presence was not shewn by any action on glasses; nor was it more successful by collecting the gas produced by exposing the enamel to heat with a fulminating acid. (Nicholson's Journal, vol. xiii. p. 214.)

Fourcroy and Vauquelin have obtained fluoric acid from tuffs and teeth, altered by remaining in the earth; but not from fresh ones. (Philosophical Magazine, vol. xxvii. p. 88.)

Mr. Berzelius of Stockholm states, that he has found fluoric acid both in the bone and in the enamel of the teeth; as also in the bones in general, both in man and in the ox. He gives the following analysis.

<table>
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<tr>
<th>Enamel of human Teeth.</th>
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<td>Phosphate of lime,</td>
<td>85.3</td>
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<tr>
<td>Fluorite of lime,</td>
<td>3.2</td>
</tr>
<tr>
<td>Carbonate of lime,</td>
<td>8.0</td>
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<tr>
<td>Phosphate of magnesia,</td>
<td>1.5</td>
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<tr>
<td>Soda, animal matter, and water,</td>
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Formation of the Teeth.

This can be bet examined, by observing the contents of the jaw of a newly born child. The bone is hollowed out into a number of cells, separated from each other by imperfect bony septa, and rather contracted at their mouths, which are towards the gum. By removing the external or internal plate of the jaw, the contents of these cells are expelled. They consist of membranous bags, called the capsulæ of the teeth, including the rudiments of the bodies of these organs, and certain lost vascular substances, termed the pulp, on which the bodies of the teeth are forming.

The bone of the body of the tooth is the part first formed; the enamel is added to this; and the fang appears the last in order.

The pulp exactly resembles in shape the body of the tooth, which is to be formed on it. It is a soft vascular substance, and its vessels are most numerous in that part which is covered by the portion of tooth already formed; so that this appears much the redder after injection.

The capsule is a membrane of whitish appearance externally, but very vascular on its inner surface. It includes the pulp, round the basis of which it adheres, and the rudiment of the imperfect tooth. On its outer surface it adheres firmly to the gum; so that if we attempt to tear the last-mentioned part up from the jaw of a fetus, the capsules and the contents will come away at the same time. These membranes adhere less closely to the bony cells, in which they are contained. The office of the capsule is that of secreting the enamel. Its cavity contains a small quantity of a fluid resembling synovia.

The offication commences by the formation of the cutting edge of the incisors, and the grinding bases of the grinders. The bony substance being deposited on the pulp, as on a mould, the rudiments of the teeth are necessarily hollow; and the bony layers first formed are those which will be in contact with the enamel, when that substance is deposited. The offication commences by as many points as there are prominences on the masticatory surface of the tooth. In the incisors there are generally three points; the middle one being the highest, and the first that begins to offy. The pulp'fudus begins by one point only; the bicuspidies by two, one external, which is the first and the highest, and the other internal. The molares begin by four or five offications, of which the external are always the first. When the teeth begin to form by one point only, they gradually proceed, until the offication is completed.

But if there are more points than one, each offication increases till their bases come in contact, when they unite and proceed in their formation as a simple tooth.

The offications in their progress become thicker and thicker where they first began; but they increase faster at the edge, which is always thin and elastic: hence the cavity
of the tooth becomes deeper in the progress of the ossification. As the formation advances, the pulp is gradually surronded, till the whole is covered by bone, except its base.

The adhesion of the pulp to the newly formed tooth or bone is very slight; for it can always be separated without any apparent violence, nor can we difcover any vessels going from the one to the other. It is, however, most strongly attached round the thin elastic edge, which is the last part formed. When the bone has covered all the pulp, it begins to contract a little, and becomes somewhat rounded, making that part of the tooth which is called the neck; and from this place the fangs begin. The formation of the fangs occasions the bodies of the teeth to ascend through the sockets, and afterwards through the gum, which is absorbed in consequence of the pressure of the tooth.

The pulp has originally no procés answering to the fang; but as the cavity in the body of the tooth is filled up by the ossification, the pulp is lengthened, and the fang forms over it. The latter part grows in length, till the whole body of the tooth is pulled through the gum: the socket, at the time, contracts at its bottom, and grasps the neck or beginning fang, adheres to it, and rises with it. This contraction is continued through the whole length of the alveolus as the fang rises; or the socket, which contained the body of the tooth, being too large for the fang, is walled or absorbed into the conformation, and a new alveolar portion is raised with the fang: whence in reality the fang does not sink or descend into the jaw.

Both in the body and in the root of a growing tooth the extreme edge of the ossification is thin, transparent, and flexible, that it seems to be rather horny than bony; very much like the mouth or edge of the shell of a fiall.

As the tooth grows, its cavity becomes gradually smaller, particularly towards the point of the fang. It is formed by a succedaneous deposition from without inwards; the external lamina, or that which adjoins the enamel, being the first formed, and the succeeding layers being added within this. Thus the cavity is gradually diminished, as the ossification advances; and it is always proportionally larger in the most incomplete teeth.

In tracing the formation of the fang of a tooth, we have hitherto supposed it to be simple; but where there are two, or more fangs, it is somewhat different, and more complicated.

When the body of a molaris is formed, there is but one general cavity in the tooth, from the brim of which the ossification is to shoot, so as to form two or three fangs. If two only, then the opposite parts of the margin of the cavity shoot across where the pulp adheres to the jaw, meet in the middle, and thereby divide the mouth of the cavity into two openings, from the edges of which the two fangs grow. Sometimes a distinct ossification begins in the middle of the general cavity upon the root of the pulp, and two proceoffes, coming from the opposite edges of the bony shell, join it, which answers the same purpose as the more ordinary structure. When there are three fangs, three proceoffes come from as many points of the brim of the cavity, meet in the centre, and divide the whole into three openings; from which the three fangs are formed.

When the surface of the tooth first appears through the gum, the formation is far from being completed: the body is at this time much hollower than in the perfect tooth, and the fang is only in an incipient state. The hollow of the body is gradually filled up, and the fang is lengthened in proportion as the tooth rises through the gum. Even when the whole body has passed the gum, the formation of the root is not completed, as it still remains hollower than in the perfect tooth.

When the bone of the body of the tooth is somewhat advanced in its formation, the enamel begins to be deposited on its surface, from the vessels of the capfule. This deposition commences on the matricating surface of the tooth, and thence extends towards the root. It is at first very moist, and presents a rough appearance when dried. It continues in this state until it has acquired the full degree of thickness, when it becomes white and hard, and assumes its natural shining and polished surface. The deposition of this substance is completed when the fang of the tooth begins to form; for at that time the body penetrates the gum, and thereby lays open the capfule, which will be found at this period to have undergone great alteration in its texture and appearance. Instead of the soft vascular surface, which it exhibited while the deposition of the enamel was proceeding, it is now dense, compact, and almost tenacious, with very few blood-vessels. The capfule, which before provided no adhesion to the tooth, becomes connected to it when the formation of the fang commences; and it forms the period of the tooth. Mr. Hunter states, that the enamel is deposited from a pulp, analogous to that on which the bone forms. There is no foundation for this assertion; and the mistake, which has been noticed by Blake in his valuable Essay (chap. iv.), arose probably from the situation of the rudiments of the permanent incifores behind, and close upon the capitules of the temporary ones at the time of birth; and partly also, perhaps, from the analogy of graminivorous quadrupeds, where pulp processes descend from the capfule into the teeth, to deposit the proceoffes of enamel, intermixed with the bony substance of the organ.

The regular striated appearance of the enamel has led some to suppose, that it forms on the tooth by a process of crystallization; being contained in a dissolved state in the mucous fluid, which exults in the cavity of the capfule. We cannot attach much weight to this explanation, when we consider that that fluid does not contain a greater proportion of phaffate of lime than other similar animal liquors; that the deposition, in the teeth of some animals, is confined to a particular part of the tooth: and that there are instances, occasionally, in which a small spot has no enamel.

Classification and Description of the adult Teeth.

The whole number of the adult teeth is thirty-two; and they are equally divided between the two jaws, so that each of these contains sixteen. Occasionally there are only twenty-eight or thirty. Of the sixteen teeth contained in each jaw, those on the left side are just the same with those on the right, so that they are arranged in pairs; and the teeth in the upper jaw nearly resemble those of the lower jaw in situation, figure, and use.

The teeth have been commonly divided into incifores, canines, and grinders. This arrangement is not adopted by Mr. Hunter, who substitutes in its place a more eligible one. He divides those organs into four classes. 1. The incifores, or cutting-teeth, which include the four front ones of each jaw. 2. Cuspifates, two in number: one on each side of the incisors. These were formerly called canine teeth, from a comparison to the corresponding ones in the dog; and other carnivorous animals, to which they bear no resemblance. 3. Bicuspidates, four in each jaw, two on each side. These are most clearly distinguished by their smaller size from the back teeth, with which they were before included.
CRANIUM.

clined, in the common denomination of grinders. 4. Mo-
olares, fix in number, three on each side, behind the bicus-
piides.

There is a regular gradation, both in growth and form, through the incisors, from the incisors to the molares; in
which respect the cuspids are of a middle nature between the
incisors and bicuspides, as the last form the connecting
link between the cuspids and molares. Consequently the
incisors and molares are the most unlike in every circum-
stance.

The following description is taken from the teeth of the
lower jaw, and the differences between these and the upper
teeth are noticed subsequently.

The incisor teeth (primores of Linnaeus; incisi, rirforii) have an anterior and posterior flat surface, which meet in a
cutting edge. The anterior surface is convex, and placed
almost perpendicularly; the posterior is concave, and flop-
ing, so that the cutting edge is directly over the front sur-
face.

The two surfaces are broadest at the cutting edge, and
then grow gradually narrower from that part to the neck.
The side of the tooth, on the contrary, is narrowest at its
cutting edge, and becomes thicker and thicker towards the
neck; so that it is of a wedge-like form. The fang, on
the contrary, is compressed laterally; so that its sides are
broadest, and the anterior and posterior surface are nar-
rowest. It follows, therefore, that an incisor tooth, when
viewed on its anterior or posterior surface, is broadest at the
cutting edge, and grows constantly narrower to the ex-
trimity of its fang; but in a side view, it is thickest or
broadest at its neck, and thence becomes gradually more
narrow, both to its cutting edge and to the point of its
fang. The enamel is continued farther down, and is thicker
on the anterior and back part of the incisors than on their
sides; it is also rather thicker on the fore part than on the
back of the tooth. They fad almost perpendicularly;
their bodies being turned a very little forwards. The two
middle ones are smaller than the two exterior: they are in-
deed the smallest teeth in the mouth, and are distinguished
by the epithet of small incifors, from the lateral ones or
large incisors.

The upper incisors are considerably broader, thicker, and
stronger, than the corresponding lower teeth. The two
middle ones are considerably the largest, and are distingui-
hed by the term of large incisors. The fangs of these teeth are
round, instead of flattened, especially those of the large in-
cisors. They project in front more than the lower teeth,
so that their axis points downwards and forwards; and they
usually overlap those of the lower jaw to a small extent.

The upper large incisor covers the lower small ones and
half of the large; and the upper small one covers the other
half of the lower large incisor, and more than half of the
cuspids. The edges of these teeth generally become
blunt and thicker by the friction of mastication; but in
some persons they are rendered thinner by the mutual
attrition.

The Cuspids (Janiarii of Linnaeus; canines).

These teeth are thicker and stronger than the incisors,
possessing a large and long fang, which causes a marked pro-
minence of the outer plate of the alveolar procies. Their
body, which is thick, and nearly cylindrical at the root,
terminates above in a point, which projects beyond the other
teeth, particularly in the lower jaw. Their fang is com-
pressed laterally, and occasionally divided through its lower
half, into two. Their sides are more extensively covered
with enamel than those of the incisors: and they fad al-
most perpendicularly. They are considerably larger in the
upper jaw; and their fangs are longer than those of any
teeth; from which circumstance they have acquired the
name of eye-teeth in common language.

When the jaws are cloesed, the upper cuspids falls be-
tween the lower corresponding tooth, and the first bicuspis;
and projects but a little over them. Their points are foon worn
away by mastication, and then they rather resemble the in-
cisors, but as the friction goes on the worn surface is much
more cylindrical.

The Bicuspid.

The bicuspid resembles each other so much, that a de-
scription of the first will serve for both. The first indeed
is frequently the smallest, and has rather the longest fang,
approaching more nearly than the second to the shape of the
cuspids. Its body is flattened laterally, and it terminates
above in two obtuse tubercles, an external, and an inter-
nal one; of which the former is the longest and thickest;
so that on looking into the mouth from without, this point
only can be seen, and the tooth has very much the appear-
ance of a cuspids. The internal point is the leaf, and
indeed sometimes fo very small, that the tooth greatly re-
femblies a cuspids in any view. It is broadest in the lat-
eral direction at the union of the two points, and thence it
diminishes to the pointed extremity of the fang. The fang
itself, which is broad, and compressed laterally, is some-
times forked at its extremity. The enamel extends nearly
equally all round the neck of these teeth. They fad per-
pendicularly in the jaw.

In the upper jaw they are more flattened laterally, and
broader from within outwards, than in the lower; and are in-
clined a very little forwards and outwards. They possess here
frequently two fangs, instead of the single broad one which
they have in the lower jaw; but the division does not in ge-
neral extend to the neck of the tooth, when there is only
one broad fang, it contains two cavities; one towards each
margin. The first upper bicuspis falls between the two cor-
responding lower teeth; the second between the second lower
bicuspis, and the first grinder; and they project a little over
those of the lower jaw.

These teeth are more frequently wanting than any others,
excepting the dentes faciens.

Molares, or Grinders.

The first and second of these nearly resemble each other
in their form, so that they may be considered together:
the third differs from the two in some circumstances.

The grinders differ from the bicuspides, in being much
larger; in having more numerous points on the body, and
more fangs. Their grinding base forms a square, with
rounded angles. The surface has commonly five points or
protuberances; two of which are on the inner, and three on
the outer part of the tooth: there are also generally some
smaller points at the root of these larger protuberances.
These inequalities, being situated at the margins of the
grinding faces, leave an irregular superficial cavity in the
middle of the tooth. The three outer points do not stand
so near to the outer edge of the tooth, as the inner ones do
to the inner margin; so that the body swells more from the
points, or is more convex, on the outer surface. The body
is but slightly contracted at the neck, where it divides into
two broad and flat fangs, an anterior and a posterior one,
which are generally bent a little backwards. The flat sur-
faces of these fangs are placed directly across the jaw, so
that
that one is precisely anterior and the other posterior; their edges are turned towards the two plates of the alveolar process, and are consequently exterior and interior. They continue broad nearly to their extremities, which are sometimes bifurcated. There are two cavities in each fang; one towards each edge, leading to the general cavity in the body of the tooth. The fang is therefore thicker at these parts, and thinner in its middle, where it is marked externally by a longitudinal groove. The enamel is much thicker on the grinding surface of these teeth than in other parts, but it terminates at the same line all round the neck.

The second grinder is somewhat larger and stronger than the first; it is turned a little more inward than the adjacent bicuspides, but not so much as the second grinder. Both of them have generally rather shorter fangs than the bicuspides.

There is a greater difference between these grinders in the upper and lower jaw, than in any of the other teeth.

They are rather rhomboidal than square in the upper jaw; having one sharp angle turned forwards and outwards, the other backwards and inwards. They have three smaller and round fangs, which diverge and terminate in a pointed manner; each of them having a simple cavity. Two of these are placed near each other, perpendicularly over the outside of the tooth; and the other, which is generally the largest, stands at a greater distance on the inside of the tooth, flanging inwards. They are inclined outwards and a little forwards; projecting slightly over the corresponding teeth of the lower jaw, and placed further back in the mouth, so that each is partly opposed to two of the lower jaw. They are placed directly under the maxillary sinus, and the second is rather the smallest of the two.

The third molars in each jaw is called, from the circumstance of its appearing late in life, dens fapienitii, or the wise tooth. It is shorter and smaller than the others. Its body is rounder, but possesses the same general formation with the other grinders. The fangs are not so regular and distinct; generally appearing as if squeezed together into one; and sometimes there is only one thick conical fang. It varies more in the upper than in the lower jaw; and is smaller in the former than in the latter, so as to be directly opposed to it. And but for this circumstance the grinders would reach further back in the upper jaw than in the lower.

When the natural number of the teeth is less than usual, it arises from a want of these dentes fapienitii.

General Observations on the Teeth, as viewed in Conjunction.

From the incisories to the first grinder, the teeth become gradually thicker at the extremity of their bodies; and smaller from the first grinder to the dens fapienitii. From the cuspifatus to the wise tooth, the fangs become shorter: the incisors are nearly of the same length with the bicuspides.

From the first incisor to the last grinder, the teeth stand out less from the sockets and gum.

The bodies of the lower teeth are turned a little outwards at the front of the jaw; and thence to the third grinder they are inclined gradually more inwards. The upper teeth project over those of the under jaw, especially at the forepart, where the cutting edges of the upper incisors overlap that of the lower, so that they act like the blades of a pair of scissors. This arises from the upper teeth being placed more obliquely, for the circle of the sockets is nearly the same in both jaws. This obliquity becomes constantly less from the incisors to the last grinder; so that instead of overlapping, the outer edge of the upper teeth projects a little over the opposed margin of the lower ones.

The teeth in the upper jaw are placed farther back in the circle, than the corresponding ones in the lower; in consequence of the upper incisors, particularly the two front ones, and the cuspifatus being broader than the lower teeth. Yet this is compensated by the lower back grinders being larger than the upper ones, so that the upper dens fapienitii fall on the surface of the lower one.

The size of the fangs bears a proportion to the bodies of the teeth for reasons which must be obvious. They seem to be rather less firmly fixed in the upper than in the under jaw, or, in other words, the alveolar process is strongest in the former. This difference may be partly accounted for by the situation of the annular. The upper grinders, instead of possessing two strong and straight fangs, have three smaller diverging ones, inclining, as it were, the bottom of the annular. That all this weakness of the upper jaw is for the increase of the annular, is rendered probable by considering that the upper teeth are generally similar to those of the lower jaw, excepting just where they are opposite to the maxillary sinus; and here they differ principally in the fangs, without any other apparent cause. And this is further confirmed by observing, that the dentes fapienitii of both jaws are more alike than the other grinders, because they do not interfere so much with the sinuses.

The arch formed by the teeth altogether is generally parabolical, sometimes elliptical, but very rarely semicircular. Sometimes it forms nearly a straight line in front, and this joins the sides by two angles. It is more capacious in the upper than in the lower jaw, on account of the greater breadth of the front teeth; but the difference is trivial at the back part.

The line formed by the junction of the teeth is not perfectly straight, being slightly elevated before and behind, and depressed in the middle. Hence the front and back teeth of the lower jaw are rather higher than the middle ones, in order to meet the upper teeth.

The arch of the teeth forms a simple line at the anterior part of their masticating surface: but from the point of the cuspifatus backwards, in consequence of the breadth of the bicuspides and molares, there is a double line, constituting an outer and an inner margin.

The number and disposition of the teeth are usually found as we have above described them. There are occasionally supernumerary ones, which are most frequent about the incisors and cuspifati of the upper jaw. And sometimes, where the number is not greater than usual, from want of room or other causes, the teeth deviate in various ways from their ordinary position, so as even, in some instances, to give the appearance of a double row in the front of the mouth. The exact description, and the mode of remedying such deformities, fall within the province of the dentist.

Wearing of the Teeth by Mastication.

The true and exact form of the teeth can only be observed just after they have appeared in the cavity of the mouth.

For afterwards, the constant friction, which they experience in the act of mastication, wears away their opposed surfaces, and thereby changes their form. Thus the incisors, which at first possess three prominent points on their cutting edge, soon have these projections removed; the apex of the cuspifatus is speedily worn off, so as to render the body obsolete; and the prominences of the grinders are removed in the same manner at a more remote period. Af-
ter a certain time the enamel is consumed from the masticating surfaces of the teeth; this happens tolerably soon in the incisors and cuspidati. After the exposure of the bone the tooth wears down much more rapidly while the superior hardness of the enamel causes that part to refract longer and thereby to form an elevated margin. The body is at last consumed in the progress of time down to the very neck; and it is obvious that the cavity would be exposed by this process, were it not filled up by new matter, in proportion as the surface is worn off. This newly formed matter may be readily distinguished as it forms a more transparent spot in the middle of the tooth. The effects of the friction of mastication on the teeth are most strikingly exhibited in the crania of savages; or of such persons as have lived most nearly in a state of nature, or on the most simple kinds of food. Here we often find the grinders with their prominences destroyed, and worn down to a level surface. This may be partly accounted for by the food being less softened by the artificial aid of the processes of cookery, and partly by the natural effects of attrition being anticipated in us by caries of these organs.

It must be obvious from this description, that there is no process of reparation going on in the teeth to supply the loss of substance occasioned by mastication. We shall prove in a subsequent part of the article that these parts possess no vessels nor nerves, and that they must consequently be completely incapable of such processes. How indeed can we supposo, that organs defined for the mechanical reduction of the food, and which therefore can only be compared to billions, should be induced with vascularity and sensibility? These parts are constantly becoming less after they have cut the gum, by their surface wearing away in the manner above described. Yet in some books even of such distinguished authors, as ought to have been better acquainted with the subject (for instance, in Monro’s very excellent description of the Bones, p. 15,) it is stated that they are constantly growing larger. The proofs of this fact are said to be, that when an upper or lower tooth is lost, the opposite one grows longer, and that the teeth before and behind the vacancy grow broader. The appearances in these cases are truly fixed; but we have a more natural solution of them, than by the hypotheses of ascribing vascularity to the teeth. When a tooth has lost its opposite one of the other jaw, it seems to become longer than the others, in proportion as these have become shorter by abrasion; which cannot now affect the apparently lengthened tooth. The effect may possibly be further increased in this instance by the loss of pressure giving the alveolar processes of the opposite tooth a disposition to rise higher, and fill up below. Where the interval left by a fallen tooth seems to be contracted by the increased thickness of the adjacent teeth, the appearance is occasioned by the teeth moving from that side, where they are well supported, to the other side, where they are not. Thus they get an inclined direction, which extends to the adjacent teeth in a proportionally less degree, and affects those which are behind, more than those which are before the vacant space. This kind of effect is most observable in the lower jaw, where the back teeth are naturally inclined forwards.

Life of the Teeth.

The general utility of the teeth in masticating the food, will be considered under the article Mastication. They are moreover of great service in the pronunciation of several letters; particularly the front teeth, the loss of which occasions a peculiar defect of the speech, called lipping. The loss of all the teeth, and the alveolar processes in old persons, still further impairs pronunciation by obstructing considerably the motions of the tongue.

Are the Teeth of Man Carnivorous?

We cannot decide this question better than in the words of Mr. Hunter: “Natural historians have been at great pains to prove from the teeth, that man is not a carnivorous animal; but in this, as in many other things, they have not been accurate in their definitions; nor have they determined what a carnivorous animal is. If they mean an animal that catches and kills its prey with its teeth, and eats that flesh of the prey, just as it is killed, they are in the right; man is not in this sense a carnivorous animal, and therefore he has no teeth like those of a lion; and this, I presume, is what they mean.

But if their meaning were that the human teeth are not fitted for eating meat that has been caught, killed, and dressed by art, in all the various ways that the superiority of the human mind can invent, they are in the wrong. Indeed from this confined way of thinking, it would be hard to say what the human teeth are fit for, because, by the same reasoning, man is not a graminivorous animal, as his teeth are not fitted for pulling vegetable food, &c. They are not made like those of cows or horses, for example.

“The light in which we ought to view this subject is, that man is a more perfect or complicated animal than any other; and is not made like others, to come at his food by his teeth, but by his hands, directed by his superior ingenuity; the teeth being given only for the purpose of chewing the food, in order to its more easy digestion. These as well as his other organs of digestion, are fitted for the conversion of both animal and vegetable substances into blood; and therefore he is enabled to live in a much greater variety of circumstances than any other animal, and has more opportunities of exercising the faculties of his mind. He ought therefore to be considered as a compound, fitted equally to live upon flesh and vegetables.”

Of the Temporary Teeth.

The teeth, being, as we have already observed, delirious of any principal of growth within themselves, have not the power of increasing in size as the jaws grow. Hence the small teeth, which occupy the alveolar processes of the child, are discharged, at a certain period, to make room for a new set, adapted in form and quantity to the dimensions of the adult jaw. They are therefore distinguished by the epithets of the temporary or deciduous teeth, from the latter, which are called the adult or permanent set.

There are ten temporary teeth in each jaw; consisting of four incisors, two cuspidati, and four grinders. In position and form these resemble the corresponding permanent ones, which have been already described; and the chief difference consists in their being very much smaller. The temporary set contains therefore no teeth corresponding to the adult bicuspides. The cuspidatus has a more pointed form than in the adult; and the front grinder is smaller than the posterior one.

Formation and Time of Appearance of the Temporary Teeth.

At the ninth or tenth week after conception there is a simple longitudinal groove in the jaw; containing a soft jelly-like vascular substance, without any distinction of parts; at the fifth month bony partitions begin to shoot across the alveolar grooves; the pulps and capillaries can now be distinguished, but are still in a gelatinous state; small hollow shells have formed on the incisors and cuspidati, and ossification
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cation has commenced by some angular depictions on the
points of the grinders. The canal of the vessels and nerve
is open at the bottom of the alveolar groove, and the caps-
ules adhere so strongly to the gum, that they come away,
if that part be torn up from the jaw.

In the full-grown fetus, the rudiments of the teeth are
contained in almost complete bony cells. The different
capsules are separated by bony septa; and the mouths of the
cavities, which are situated towards the gum, are rather
contracted in order to support that part, and to prevent
the still imperfect rudiments from being injured by any
mechanical precaution. At this time the pulps of the incisors
and cuspidata are nearly covered by bony shells; the points
of efflorescence of the grinders are united or very nearly so.
There are the rudiments of six teeth in each side of the jaw
at this time; viz. the five temporary ones, and of the first
or anterior adult grinder, which is contained in the same
bony cell with the second temporary molaria; and is
situated under the coronoid process of the lower jaw, and in
the tubercle of the upper.

As ossification does not commence on all the pulps at the
same time, those on which it first commenced are in general
the foanne completed, and of course they appear through
the gum first. At the time of birth the bodies of the
middle incisors of both jaws are the most perfect; the lateral
incisors and the small grinders are the next in order;
and the cuspidata and large grinders are the last complete.
In general the teeth begin to appear about the sixth,
seventh, or eighth month after birth; but there are some
exceptions to this rule; owing to the rapid progress of ossi-
fection in some children, and the slowness of it in others.
There are a few instances of children at birth having one
or two of the incisors already cut, and in such cases it is
often necessary to remove them immediately; on the contrary,
in children apparently healthy they have not begun to ap-
pear till the first, second, and even the third year. For
the most part they appear in pairs; that is, the two corre-
sponding teeth on either side of the jaw come through
the gum at the same time. The first teeth are the middle
incisors of the under-jaw, and in a few weeks after the
middle incisors of the upper appear. In a month or six weeks
afterwards, we have reason to expect the lateral incisors;
which are followed in a short time by those of the upper
jaw. About the twelfth or fourteenth month the under anterior grinders appear, and those of the upper jaw
about the same time. At the sixteenth or twentieth month
the cuspidata appear, and first in the lower jaw. The po-
terior or large grinders come through the gum from the
twentieth to the thirtieth month. Thus, in general, about the
second or third year, the twenty temporary teeth are com-
plete. We must not however expect to find the teeth al-
ways appear in the precise order which has been just de-
scribed. Some irregularities are frequently met with;
such as, one tooth appearing a considerable time before its
fellow; all the incisors of the under jaw before any of the
upper; or the incisors, which is very rare. The anterior
grinders sometimes come through before the lateral incisors;
and the posterior grinders before the cuspidata; but the cus-
pidata are never cut before the small grinders. Three or
four teeth sometimes appear nearly at the same period. The
small grinders have been known, in a very few instances, to
come through first of all.

Formation, and Time of Appearance of the permanent Teeth.

The adult teeth are formed in the same manner with
those of the temporary set; and their capsules are contained
in peculiar cavities of the jaws, situated for the most part
near those of the deciduous class.

The rudiments of the incisors and canine teeth are found
at the time of birth closely adherent to the posterior surface
of the capsules of the temporary ones, as Eulachins has
justly observed. At this time, therefore, they are contained
in the same pockets with the deciduous teeth; and there is
a very distinct fossa on the upper plate of the alveolar proc-
cess at this period, caused by the situation of the adult large
incisor, the pulp of which is now tolerably advanced.

The foci of the permanent teeth, situated as we have just
mentioned, are intimately connected with the membranes
of the temporary set, that they cannot be separated with-
out tearing one or both. As their formation proceeds, they
become surrounded by a complete bony cell, which, as the
temporary teeth rise in the jaw, is situated below and be-
hind them in the lower maxilla, above and behind them in
the upper jaw. Ossification has commenced on these teeth
at the age of six or seven months. Their formation is con-
iderably advanced at the age when the temporary incisors
have appeared. The ossification of the lower adult cuspi-
data has now commenced, and the pulp of the upper cuspi-
data is formed; this begins to ossify about the sixteenth
month.

The capsules of these permanent teeth are connected to
the gum by processes passing through certain openings
of their bony cells, which form small foramina just behind the
corresponding temporary teeth.

As the adult incisors and cuspidata form in that portion
of the jaw which holds the analogous temporary teeth, and
are so much larger than these, they are consequently
crowded; the lateral incisors are rather behind the middle
ones, and the cuspidata are placed at a great distance from
the alveolar portion of the jaw; being just under the orbital
plate of the upper maxillary bone, and close to the bony
of the lower jaw. Hence the processes connecting its capsule
to the gum has the appearance of a slender thread passing
through the bone.

The adult bicuspides form over and under the temporary
molars. Ossification has commenced on the points of these
in the lower jaw about the third year, and they are all con-
iderably advanced at the age of six years.

The adult molares are not formed in the neighbourhood
of any temporary teeth, but completely behind them.
These are successively produced under the coronoid pro-
cess of the lower jaw, and in the tubercle of the upper. The
anterior grinder is the first permanent tooth that can be dis-
covered. This is discerned some time before birth: and ossi-
faction has commenced on one or more of its points at the
time of birth. At the fourth year this grinder has left its
original situation under the coronoid process and in the tu-
bercle, and has advanced in the jaw. Its place is suppli-
ded by the second grinder, which comes forwards in the same
way; and the situation of this tooth is occupied at the eighth
or ninth year by the dens temporis, which then be-
gins to form.

The temporal teeth of the adult set proceed in their forma-
tion in the situations just described until they have attained
such a state of perfection as to come through the gum. The
temporary teeth are then tied to make room for them. This
is effected by the gradual absorption of their fangs, which
being completely removed, the neck only holds by the gum,
and the tooth then falls out with the slightest force. The
appearance of the temporary teeth, when thus discharged,
has led some to the erroneous idea that they polishes no
fangs.

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It has been often stated, that the absorption is produced by the pressure of the new teeth, which mechanically pull out the old ones. But that this is not true, is shown by this circumstance, that the fangs are often absorbed long before the permanent teeth appears; and sometimes even where no permanent tooth succeeds. On the contrary, some of the deciduous teeth occasionally remain in the jaw among the adult teeth. This is the case where no corresponding permanent teeth are formed; so that, if the absorption of the temporary fangs be not owing to any actual pressure, the formation of the permanent set must considerably influence the process. The temporary incisors, both of the upper and under jaw, sometimes continue during life; and occasionally one or more of the bicuspides is wanting. A person has been known to have only four teeth of the permanent set in each jaw. (Fox’s “Natural History of the Human Teeth,” p. 41.) The shedding of the teeth generally commences at the sixth or seventh year. The filing of the permanent teeth destroys the partition which separated its cell from the temporary socket, through which the adult tooth appears. But if the fang of the temporary tooth should not have been absorbed in proportion to the advancement of the permanent one, the latter protrudes at the opening through which its capsule was connected to the gum, so as to appear behind the temporary tooth.

The membranous processes, which pass through the foramina of the jaws to connect the capsules of the permanent teeth to the gum, seem to have been first noticed by Blake, although the openings themselves, and their situation, were known to, and accurately described by Albinus. The former author considers the rudiments of the permanent teeth to be processes of the temporary capsules, and that the membranes unite the permanent capsules to the necks of the temporary teeth. To us this representation has never appeared quite correct: the capsules of the permanent incisors and cucipidatis, when they can be felt observed, are contained in the same sockets with the temporary teeth, and undoubtedly are most closely connected to their capsules; but when they have become included in complete bony cells, the connection between the two facts ceases; the process which goes through the opening of the jaw to the gum, has no particular connection to the temporary tooth, except inasmuch as the gum adheres to the neck of the tooth. That the permanent capsules in some instances are not at all formed by any processes of the temporary ones, is evident from the bicuspides; the rudiments of which are not perceptible until after the child’s grinders have completed their growth. Neither have we noticed that connection, which Blake speaks of, between the first and second, and the second and third adult molars. (See his fourth chapter.)

It will be easy, from what we have already said, to determine the number of teeth which are formed and forming in the jaw at any given time. Thus at the time of birth there are in each jaw the rudiments of the ten temporary teeth; of the two anterior molars; and those of the adult incisors at heel, in an incipient state, if not of the cucipidati. The greatest number is found in the jaw, just before the shedding of the teeth commences; that is, about the fifth year. There are then twenty-four teeth in each jaw-bone; viz., the ten temporary ones, and all the permanent set, excepting the dentes sapiens. It is stated however by Blake, who, in his own-ji-auxious zeal to detect every trivial mistake of Mr. Hunter, not uncommonly commits errors himself, that there is a greater number in the jaw at the age of four years; and he makes this number amount to twenty-six, which includes the whole of the deciduous and permanent

fe. We have never found the dentes sapiens beginning to be formed at so early a period as this; but if they begin very soon, or the shedding does not commence until late, there may undoubtedly be twenty-fix teeth in each jaw at once, although this is not usual.

The usual time for the shedding of the teeth to begin is about the sixth or seventh year; it may commence as early as the fifth, or be delayed until the eighth. The anterior molares being rather earlier in their formation than the incisors, usually appear first; and soon after these have been cut, the shedding of the temporary teeth may be expected to begin. The central lower incisors are first removed, and succeeded by the permanent ones: those of the upper jaw appear about two or three months after. The lateral incisors of the under jaw follow next in succession, and then those of the upper. The temporary molares begin to loosen in about six or twelve months more, and are usually shed before the cucipidatis. The first bicuspides come into the place of the anterior grinders about the ninth year; and soon after the tenth, the incisors, and one of them is a person whom he himself saw. He found the new teeth of a molar conformation than teeth usually are, and he considered them as imperfect in their formation. In the last volume of his ("Elements of Physiology," part 2. p. 85.) Haller has collected several cases mentioned by preceding authors. These evidences must be allowed to prove clearly that teeth have appeared at a late period of life, although the number in any one instance has been small, and the examples of the occurrence very rare. It has never occurred to any anatomist to detect the rudiments of these teeth in the jaw, during their formation; and perhaps a closer examination might shew that in some instances the appearance has only arisen from some of the permanent teeth being cut unusually late: as we know that the cutting of these teeth is sometimes delayed for many years beyond the usual time. At all events, we ought not to admit any case as clear proof of the fact, unless it could be ascertained that the person in whom it appeared had had the two ordinary sets of teeth, confiding each of its natural number, and this probably has not been made out in any one instance. The "Account of a Case of three different Growths of Teeth succeeding one another in the Jaw of a Child," in the third volume of the London Medical Observations and Inquiries, is to imperfect and inoffensive, that we can draw no conclusions from it.
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Form of the Jaws as influenced by the Teeth.

These bones may be said perhaps to grow equally in all directions until the time of birth. Yet in the latter months of fetal existence they probably increase rather more towards their posterior part than in other situations; for although about five months we find only five rudiments in each side of the bone, there are six discoverable at the seventh or eighth month; and the sixth occupies the situation which was before filled by the fifth.

At twelve months after birth, the ten temporary teeth are tolerably complete in their size; and, after this time, the jaws grow no more in that part which holds these teeth, than in proportion to the difference of size between the deciduous and temporary teeth. The front arch of the jaw is therefore very nearly as large at this time as in the adult, and hence the face of the child has a flattened appearance at its anterior part.

But these bones still increase very considerably towards their posterior parts; and as they do so, the adult molars advance successively from the tubercle of the upper jaw, and the coronoid processes of the lower. The sixth tooth (first adult molaris), which was in the situations in the newly-born child, has advanced completely in front of them at the age of four years, when its place is occupied by the second adult grinder, which coming forwards in the same way, as the jaw increases at its posterior part, is succeeded by the third, or dens fissipienae; and this last advances into the alveolar circle at a later period.

There are also most remarkable changes at different periods in the alveolar portions of the jaws. The subsidence of the bones is hollowed out into cells at the time of birth to contain the rudiments of the forming teeth; but alveolar processes in the proper sense of the term cannot be said to exist at this period. The gums in the upper jaw are nearly on a level with the glenoid cavity of the temporal bone; and in the lower jaw with the condyle. The surface of the palate is nearly level. As the teeth advance into the mouth, the margin of the jaw is lengthened into an alveolar process, so that the gum is now very considerably below the level of the glenoid cavity. The ramus of the lower jaw must be proportionally lengthened; and still more so, as the breadth of the lower jaw is equally increased with that of the upper, by the growth of the alveolar processes. This increased depth of the jaws, with the addition of the teeth, made of course very greatly lengthen the face; which receives its former shortness in old age by the loss of the teeth, and the consequent removal of the alveolar processes. A diminution is hence effected of not much less than two inches in some cases. The edge of the upper gum now again is on a level with the glenoid cavity; and the palate, instead of its strongly-arched form, is again nearly flat. The length of the ramus of the lower jaw cannot however be altered; hence it flunts in front over the upper one, so as to bring the upper and lower gums into contact at the back of the mouth, where the greatest force can be exerted in mastication. If the jaws of a toothless person came in contact in their anterior part, they would not touch behind. The degree of diminution in breadth of the lower jaw may be easily estimated by comparing the situation of the foramen mentale. This opening in the perfect jaw is rather nearer to the under than to the upper margin of the bone; but after the loss of the alveolar processes, it is close on the upper edge.

Are the Teeth Vascular?

The question concerning which anatomists and physiologists are divided in opinion on this subject is, whether the bone of the tooth polaffs any vessels or nerves in its substance, so as to be capable of those actions and changes which we may observe in other vascular and living parts? Or whether it be delitute of vessels and nerves, unpossessed of vitality, and obnoxious to such changes only as can be effected by mechanical and chemical agency? The arguments in favour of the latter opinion are beyond all comparison the most numerous and direct, so that we cannot help being greatly surprized that the opposite sentiment should have acquired any partizans among physicians acquainted with the structure, formation, and diseases of these organs. In considering this question, the enamel does not come under our observation; as that part is allowed to be destitute of vessels, even by the physicians who argue for their existence in the bone of the tooth; and we shall, therefore, in the following discussion, assume that it is not vascular.

The office which the teeth perform affords a strong presumption against their possessing vessels and nerves. Is it at all probable that a vascular and sensible part should be defined to perform the triturating of the different hard bodies, which constitute our food, and be exposed to the mechanical attrition which this office must necessarily occasion? Here it may be said, that the enamel is an insensible external covering, intended to resist the effects of the hard bodies, which are masticated, and to protect the vascular and sensible bone. But the time comes, when the enamel being worn away, the bone of the tooth is itself exposed to friction, and exposed in that part where the greatest effects are produced. Another argument, to the same effect, arises from the formation of two sets of teeth. As these organs are formed at once of the same of which they always remain, and as the jaw-bone, which contains them, increases like all other vascular parts of the body, the teeth of the child do not correspond in size to the jaw of the adult; hence, the necessity of a second set of teeth. Surely, if these organs were vascular; if they possessed in themselves the means of growth they would increase, so as to accommodate themselves to the size of the jaw, and we should not have this tedious and complicated process of forming a new set of teeth, of discharging the old ones to make room for these, and of bringing them forwards at long and regular intervals; a process which gives rise to so many troublesome complaints, and affords so much employment for the dentist.

The teeth never exhibit any appearances of repairment, under circumstances of accidental injury, or of supponed disease. The loss of subslance occasioned by the friction of mastication is not repaired; a part broken off is never renewed, but the fractured surface remains unchanged; a hole occasioned by decay is never again filled up. Nor, in short, of those processses of restitution, which fo strikingly characterize all organized bodies, for which alone powers of life and growth can ever be required, take place in the present instance; so that if the teeth possess vessels, they exist to no purpose, and manifest their presence by none of the usual phenomena.

Such is, precisely, the reasoning employed to shew that the enamel is not vascular; and every argument, tending to prove that position, will apply with equal force to shew the want of vascularity in the bone of the tooth. If it be broken off, it is never regenerated; if it be filed away, it is never reproduced. The same facts hold good of the bone of the tooth, and should lead us to the same conclusion.

There is another effect of injury on the teeth, equally conclusive with the former, as to the non-existence of vessels in their subslance. A violent blow will cause a general discoloration of a tooth, as if from a general effusion of blood.
blood throughout its texture. This effect never goes off.

There are two ways of accounting for the appearance.

1. By supposing vessels to exist throughout the substance of the tooth, which pour out the blood in confluence of the injury: or, 2dly, by supposing that the vessel in the fang is ruptured, and that the effused blood mechanically discolors the substance of the tooth. If we adopt the former explanation, the colour ought not to be permanent; for, wherever there are arteries, there must also be absorbers; and these absorbers ought to remove the effused blood as they do in bruises of the flesh parts. By the latter explanation, we gain a satisfactory solution of the difficulty; we account for the duration of the colour in the same manner as of that which arises from feeding an animal with madder.

The teeth are exempted from all those difeases which ravage the other bony structure of the body. Lues venerea, scrofula, and syphilis, which attack all other bones, never produce the slightest effect on these organs, which remain unaltered, even in cases of molitia officinum, where all the other earthly matter of the system is absorbed. In short, the teeth never become conflagrantly discolored, nor do they appear, in any instance, to participate in the least in general affections of the frame.

Their substance never swells from inflammation; it never throws out a fungus nor exfoliates; it never exfoliates. By the latter explanation, I mean, that a part of a tooth never undergoes that process of death, and subsequent separation from the living parts, which we call exfoliation in bones. Whole teeth are sometimes included in an exfoliated portion of the jaw; but then they are not at all altered in structure or appearance, which is another proof of their want of connection with the rest of the body. If it be said that these teeth are dead, like the bone which includes them, why is it not to be inferred, what are the distinctions in appearance between a dead and a living tooth? Are they to be ascertained by external infection in the living body, or can they be even demonstrated by anatomical investigation? The affections of the fangs of the temporary teeth cut off the vessels long before their teeth are actually felt; yet there is no sign or character by which a tooth, whose vascular supply is thus intercepted, can be distinguished from another, in which it remains unimpaired.

A consideration of the mode of formation of the teeth will lead us to the same conclusion, as the arguments already adduced to clearly and irrefragably establish. In this view of the subject, we must inevitably be struck with the great difference between the growth of the teeth, and that of all other bones; a circumstance which would naturally lead us to expect the differences which are found in their structure and economy. In the cartilaginous epiphyses of a young bone, vessels are seen entering from all sides: in the centre there is a small bit of bone of a loose and spongy texture, which can be made quite red by injection. We can trace this hardening through every intermediate stage to that of perfect bone; the vessels of which, even in its most compact state, are still easily demonstrable by the anatomist. Let us compare this with the growth of a tooth. If we examine it at any time, when a speck of effusion may be discerned, the part, which is then formed, is complete, and has all the properties which belong to the bone of the perfect tooth. It does not undergo that gradual process of development, which is seen in the growth of bones; but the smallest part, when once formed, never alters. The mode of connection of the tooth to its pulp is highly worthy of consideration. In cartilaginous epiphyses, the central portion of bone is imbedded in the cartilage; vessels can be traced in numbers entering it on all sides. Observe the compact in the tooth; the effusion does not go on in the centre of the pulp; but the bone of the tooth covers that part externally like a shell. The connection between them is merely that of contact of surface; there is no discoverable vascular union; a small degree of force suffices to separate them, and the surface of each remains smooth and unimpaired.

The arguments and illustrations which we have now offered, tend most strongly to shew, that the teeth possess no vessels in their substance: the point is undeniably proved by the result of anatomical injections, and the effect of feeding animals with madder.

Anatomists have not hitherto succeeded in their attempts to inject coloured fluids into the vessels of the teeth after death. The pulpy substance in the cavity of the tooth may be made red by the injection; but no trace of vessels entering the bone can be discovered. Yet the arteries of other bones, even of such as possess the most compact structure, can be readily demonstrated. No vessel can be shown in a tooth at any period of its growth, although the proportion of animal matter in the bone of the tooth is not less than what we find in any other bone. To us this argument appears most strong and convincing; but it has sometimes been evaded by stating, that there are other parts in the body possessing no demonstrable vessels, which are yet proved, by various phenomena, to be vascular. Without entering particularly into the general question, we may just observe, that an example, to carry any weight with it, should be adduced from parts of a similar structure; some bone for instance.

The effects produced on the teeth, by feeding animals with madder, tend most directly to prove that these parts possess no vessels. We refer the reader with the results of Mr. Hunter’s experiments in his own words:

“Take a young animal, viz. a pig, and feed it with madder for three or four weeks; then kill the animal, and you will find, upon examination, the following appearances: First, if this animal had some parts of its teeth formed before the feeding with madder, these parts will be known by their remaining of their natural colour; but such parts of the teeth as were formed while the animal was taking the madder, will be found to be of a red colour. This is different from what happens in all other bones; for we know that any part of a bone, which is already formed, is capable of being dyed with madder, though not to fall as the part which is forming. Therefore, as we know that all other bones, by being vascular, are susceptible of the dye, we may conclude that the teeth are not vascular; because they are not susceptible of it when once formed.” It is further stated, that the dye communicated to a growing tooth by means of madder is never afterwards discharged, although all other bones lose their colour in time. Nat. History of the Human Teeth, 2d. ed. ch. 5. p. 27 and 28.

The arguments advanced by persons who hold a contrary opinion, who consider the teeth to possess vessels and nerves, and to be endowed with vitality, are so weak and indirect, in comparison with those which are to be urged against these positions; that we should, perhaps, flinch excised, if we entirely omitted to notice them. Yet, as the subject is interesting, and as we wish to exhibit a complete view of the question, we shall below a few words on their refutation.

It is said, that a part containing so much animal matter as the teeth, could not exist in the temperature of animal body, without undergoing chemical changes. This is merely begging the question. If it can be shewn, by incon-
incontrovertible arguments, that these organs are definite of all circulation and living principle, that will prove that they can exist in such a temperature without experiencing these alterations. But the futility of the objection is shown by the circumstance of artificial teeth remaining in this situation unaltered.

The fangs of the tooth are laid to become united to each other by ankylosis, and to be deposited by deformations of bony matter like exoikoses, also to become transparent and horny in old age.

There are all instances of original formation. They exhibit none of those irregularities on the surface which characterize an ankylosis, or exoikoses, in other bones; nor is the transparency different in any one point from the healthy part of the fang. It is, in short, merely an accidental difference of form; where, as the offices of the part require no definite figure, variations in form occur daily. The transparency, or horny appearance of the fang, belongs so decidedly to the natural formation, that a *syphilius cornua* is enumerated by Blumenbach among the ordinary coincident substantals of the teeth.

A question has been triumphantly fluted to the opponents of the vascularity of the teeth; why blood is sent into the cavity of the tooth, except for purposes of growth and action? There is one very obvious end answered by this structure; that of filling up the cavity of the tooth, in proportion as it becomes exposed by the friction of mastication. This indeed onlydiffits the difficulty a step further; for why should there be any cavity at all? We will give an answer to this question, when we shall have been satisfactorily informed why male animals poifds mamme and nipples, which are never of the least use to them in any part of their lives; or why a thousand other parts of the body, which we are ignorant of the office, or can discern no connection between it, and any specific form or organization, should be formed as they are.

The yellow colour imparted to the bone of the teeth in jaundice has been urged in proof of their vascularity. This is an argument that would prove too much. The vessels of the teeth, if any such exist, are obviously so minute, that they neither convey red blood, nor coloured injection; yet they are capable of carrying so much bile as to tint the tooth or an uniform yellow to a certain distance from the cavity. If this colour be owing to a yellow fluid, contained in vessels, these tubes must be so numerous as to render the tooth much more vascular than other bone. The real state of the fact is this, the vessels of the pulp become loaded with bile, and dye that part of an uniform yellow colour; this tint is mechanically imparted to the adjacent bone, and colours it in the neighbourhood of the cavity; the effect gradually ceasing at a little distance from that part. The appearance, in short, is produced in the same way by infusing the teeth in bile after death. We are informed that the teeth in old age become changed in colour, and particularly that they acquire a greater transparency.

No one pretends to affirm, that such a change cannot happen; but why may not this change be produced by mechanical or chemical means? Have we not reason to expect that a long residence in the moisture of the mouth, and contact with all the substances that form our food, should influence the appearance of these organs; and that this effect should be produced to a greater extent, where the defluxion of the enamel by mastication, as in old perons, has exposed the bone of the tooth?

Transplanting the teeth from the head of one person to that of another, or to parts of another animal's body, as the comb of a cock, where they will become adherent, has been considered as a proof of their poifing vessels. These experiments will succeed with dead teeth; and the truth of this fact, in respect to the latter circumstance, has been ascertained by Mr. Moor, whose ingenious experiments on the teeth we have before had occasion to mention. We have seen a cock, in whose comb he had inserted a tooth, which had previously lain many months in a drawer, and it was firmly adherent.

The advocates for the vascularity of the teeth have laid great stress on the phenomena attending the decay of these organs; and particularly on the pain, which is occasioned in some parts of the proceeds. We are firmly convinced that an attentive investigation of the origin, progress, and symptoms of this affection will molt materially support and illustrate these opinions, which we have all along endeavoured to inculeate.

This disease begins by a speck on the surface of the enamel, and, when it has destroyed that part, it attacks the bone of the tooth. Its progress is now much more rapid: the bone becomes excavated, and the enamel remains in the form of a shell. The surface assumes more or less of a brown colour, and becomes considerably softened, gradually crumbling away until the cavity of the tooth is exposed. The exposure of the vascular and sensitive pulp to the air and to the food, occasions that acute pain which attends the decay in this stage.

It would perhaps be difficult to ascertain, beyond the possibility of a doubt, whether or not the pain of toothache ever comes on before the exposure of the cavity. This, at least, is certain, that if the affirmative were most clearly established, it would by no means prove the teeth to be vascular. If we take any very warm or cold fluid into the mouth, it occasions pain of the teeth: this cannot prove the surface of contact to be sensitive, for that is enamel, which no one supposes to poifd nervous vessels. The impression is communicated through the substance of the tooth to the nerves in its cavity. When the enamel and a part of the bone is removed by decay, there is so much of the median between the immpressing body and the nerve taken away, that an impression which before only excited a slight sensation, may now cause actual pain. The influence, which variations in the intensible medium between the nerves and external bodies produce on the sensation arising from their contact, is strikingly evinced in the skin; the removal of the cuticle occasions pain to follow the contact of any body, instead of its conveying to our minds impressions of its tangible properties; and a thickened state of this integument entirely obstructs sensation. It is moreover evident that the effect of the decay is not limited to the surface of the tooth, but that the discoloration extends for some distance into its substance; the change, which is indicated by this alteration of colour, may bring on a painful affection of the nerve of the tooth, without an exposure of the cavity.

The following reasons show that this decay is not the effect of vascular affection. It first attacks the enamel, which is of course not vascular. There is no attempt at regeneration during the whole process; so that if it be, as some perons call it, an ulcer, it must, we presume, be of a cancerous nature. If any doubt could remain on the subject, it will be removed by the fact, that artificial teeth are as much subject to decay as natural ones. The appearance and progress of the caries is exactly the same as in teeth naturally contained in the jaws. The discoloration appears to me to be more deep and extensive in the artificial teeth formed of the tooth of the hippopotamus, than in the natural human teeth. But in engrafted human teeth the decay is precisely similar to that of the natural ones.
The alleviation of the pain of the tooth-ache by caustic applications to the surface, as muriatic acids or argentum nitratum, has been considered as a proof that the cause is an ulcer in an irritate state, and that its irritability is destroyed by these applications. Since however these remedies may act upon the exposed vascular contents of the cavity of the tooth, or may affect these contents, before actual exposure, by penetrating through the thin medium which remains, it is obvious that they can afford no proof of the point in question. Other means however of removing the pain of tooth-ache afford a strong proof that the pain does not arise from the ulcerated surface, but from the nerves in the cavity. Let the decayed hole be filled up (which is rather a rude method of using an irritate ulcer), so as to cut off the access of the external air, and of foreign bodies, and the pain will cease.

It is not perhaps so easy to determine what the decay is, as what it is not. Those who consider the teeth as definite vessels, ascribe their decay to the chemical action of the juices of the mouth, and of the substances which are taken into the food. It is difficult to comprehend how a vessel which must necessarily be so general in its application, should be so circumscribed in its effects: never producing decay in an extent of surface, but being limited at its commencement to a small spot. Here however it may be observed, that large surface sometimes decay in artificial teeth, under circumstances favoring an accumulation of fluids in a particular part; viz. the portion which corresponds to the gum, which is usually grooved; and thereby more likely to retain any fluids.

Many arguments may be adduced to prove, that the decay of the teeth originates from the causes above-mentioned. It commences in these situations, which favour the lodgement of food or extraneous matters; as between the teeth, and near the neck, just where the gum adheres. It is cured by filling up the hole, and preventing the introduction and accumulation of the food, and the juices of the mouth. It is most frequent in the higher classes of society, where the food is of the most unnatural kind, and the appetite is pampered with all the refinements of cookery; and is much less common in the peasantries, which take more simple food, and employ it in a more natural form. It is very rare to see it in the teeth of savages, or such persons as have lived nearly in a state of nature; and it never, we believe, occurs in animals. In twelve or fourteen cranias, discovered in two burrows opened in Gloucestershire, there was not a single decayed tooth. This mode of burial has not been employed for the last six centuries, so that the heads in question must be referred to a remote period of history, to a time when the modern habits of luxury and indulgence, in respect to food, were unknown, and where the effects of such habits on the teeth were of course not discernible.

A similar observation is made by Sir John Sinclair, in his "Code of Health and Longevity," vol. 1. p. 69, respecting the flate of the teeth in the cranias, found on opening a place of interment at Scone, near Perth in Scotland. This had not been touched for two hundred years; and among a great number of skeletons there was hardly one, whose teeth were not entire and found. This fact leads the worthy baronet to supposer that our ancestors enjoyed advantages over us in the structure of their teeth; but our explanation of the appearance will be collected from the remarks made above. The practice of smoking, which is universally prevalent in some countries on the continent, is attended with a marked deleterious effect on the flate of the teeth; inasmuch that the discoloured and unsound flate of these organs, in inhabitants of such countries, attracts the notice of every traveller.

As all the attempts to prove the vascularity of the human teeth by direct arguments, drawn from the structure and diseases of these organs, have so completely failed, recourse has been had to comparative anatomy; and the constant growth of the teeth of glires, and the appearances caused by the presence of bullets in elephant’s tusks, have been brought forward in support of their opinions by the partisans of the vascularity of the teeth.

Animals of the class of Linnaeus, such as the beaver, hare, rabbit, squirrel, rat, mouse &c. are distinguished by possessing two very large incisor teeth in each jaw, which being employed by the animal in cutting various hard bodies, wear down very rapidly. Hence if these animals be kept to eat food, their teeth grow out to a great length, and if these teeth be left from one jaw, the opposite ones grow out in the same way. This constant growth of these organs is effected in the same manner as their original formation. They are hollow internally, and contain a pulp, which continues to deposit fresh substance below, in proportion as the tooth wears away above. The tusks of the elephant possess the same constant growth, as also those of the hippopotamus, and all similar organs.

When an elephant’s tusk has been shot with a leaden bullet, it is said, that the opening, through which the ball entered, is filled up again by the vessels of the tooth. The bullet is closely surrounded by the ivory, and there is a swelling towards the cavity of the tooth opposite to the situation of the foreign body, ascribed to the inflammation caused by its irritation.

It may be observed in the first place, that the appearances exhibited by the teeth in question, are by no means what we should reasonably expect in such a case. When a bullet has entered the substance of the body, the surrounding lacerated and contused parts do not grow to the metal and become firmly attached to its surface, but they inflame and suppurate, in order to get rid of the offending matter. If the ivory be vascu lar and fensive, why do not the same processes take place in it?

We can explain very satisfactorily how a bullet may enter the tusk of an elephant, and become imbedded in the ivory without any opening for its admittance being perceptible. We have already mentioned, that these tusks are constantly growing during the animal’s life, by a deposit of succesive laminae within the cavity, while the outer surface and the point are gradually worn away; and that the cavity is filled for this purpose with a vasular pulp, similar to that on which the teeth are originally formed. If a ball penetrate the side of a tusk, crofs its cavity, and lodge in the lightest way on the oppofite side, it will become covered towards the cavity by the newly deposited layers of ivory, while opening will exist between it and the surface, to account for its entrance. If it have only sufficient force to enter, it may link by its own weight between the pulp and tooth, until it reft at the bottom of the cavity. It there becomes surrounded by new layers of ivory, and as the tusk is gradually worn away, and supphed by new depofitions, it will foes be found in the centre of the folid part of the tooth. Laflly, a foreign body may enter the tusk from above, as the plate of bone which forms its socket is thin; if this defends to the lower part of the cavity, it may become imbedded by the subsequent formations of ivory. This must have happenfed in a cafe where a spearhead was found in an elephant’s tusk. The long axis of the foreign body corresponded to that of the cavity. No opening for its admittance could be discovered, and it is clear that no hu-
man strength could drive such a body through the side of a thick. See Philos. Transac. 1801, part 1.

Having now enumerated the reasons which prove that the substance of the teeth is defective of vessels and nerves, and having briefly answered some objections which may be made to that opinion, we shall terminate the present division of the article by putting one question to the supporter of a contrary doctrine. Of what use could vessels and nerves be in a part like the tooth, which undergoes no natural change except the mechanical one of abrasion of surface, which is subject to no disease except one, that is referable to chemical action; which sets up no process of regeneration to repair the effects of either of these changes, or the concomitaneous of accidental injury, and which in every known state is totally deficient in itself of alienation? We desire to know what end could be answered by making these parts vascular and sensible?


In the description which we have thus given of the individual bones of the cranium and face, all the particulars relating to their structure and formation are detailed. It remains for us to view the skull as forming one whole, which is indeed the proper way of considering it, as the connection of the various bones, by means of futures, is so firm, that the adult cranium may be considered as consisting of a single piece of bone. Hence it becomes necessary to describe the form of the cranium and face in a general way.

Many of the cavities and depressions in the skull and face, which are formed by processes of several bones, would not be at all understood by reading the descriptions of the individual bones. These, therefore, must be described as they exist in the entire cranium, in order to give the reader a notion of their form, extent, &c. Hence we shall add to the account of the form of the cranium and face, a description of the calvaria (skull cap), bőső crani, temporal fossa orbit and nőf, and a general enumeration of the openings on the surface of the skull. This will be followed by a description of the national differences in the form of the skull, and the article will be concluded by an enumeration of the characters of the human head; by an account of those points of structure which distinguish the cranium of man from that of other animals.

**Form of the Cranium and Face.**

The external surface of the cranium, considered on its anterior, superior, and posterior parts, is pretty regularly elliptical; the narrower part of the ellipse being placed in front, and the broader part behind. The radius of the anterior part is to that of the posterior as three to four, or two to three, in the infant; as thirty to thirty-one in the adult. The largest horizontal circumference of the cranium presents likewise an oval figure, and is narrow or contracted in front, broader behind. The anterior, posterior, and upper parts of the bony arch are uniformly convex on their surface; but the sides of the cranium are rather flattened by the temporal muscles. These, however, are convex like the rest of the surface in infants.

The greatest diameter of the cranium is from the os fron-
and is terminated anteriorly by a thin projecting bony plate, the two corners of which form the posterior ethmoid processes. The effuse laminae, which forms the boundary of this excavation, belongs to the ethmoid bone; the concavity itself is chiefly formed by the bony processes of the orbit, and may be called the inferior fissura. The medulla oblongata rests in it, and at its upper or posterior part the medulla spinalis passes through the foramen magnum.

From each posterior ethmoid process a sharp ridge is continued obliquely backwards and downwards, and marks the termination of the fossa cerebelli in this direction. To this part, which belongs to the petrous portion of the temporal bone, the tentorium cerebelli is affixed. The posterior boundary of this fossa is formed by the internal transverse ridge of the occiput; from the middle of which a longitudinal spine extends to the foramen magnum, so as to divide the fossa cerebelli into equal portions; in which the two lobes of the cerebellum are contained.

The anterior region, which supports the front lobes of the cerebrum, is formed by the root of the orbits and nose. It is not separated, by any mark of distinction, from the calvaria. Its posterior boundary is the sharp concave edge of the lesser sphenoid ala. The terminations towards the inner and back part by two rounded projections (anterior ethmoid processes) situated nearly opposite the posterior ethmoid processes. A flight prominence of the bone between these projecting points completes its posterior boundary. The middle of this region is the deepest; it is the cribrostamella of the ethmoid bone, having the cribra Retzius standing up from its middle, and dividing the two anterior lobes of the cerebrum. The sides, which are formed by the roofs of the orbits, are convex and irregular on their surface, from the prominences which rise between the convolutions of the brain.

The middle region consists of a large fossa on either side of the skull, formed by the upper surface of the great sphenoid ala, and of the petrous bone. The boundaries of the anterior and middle regions will of course form the limits of these middle fossae of the cranium. The surface of this division occupies the intermediate degree between the level of the anterior and posterior regions. As these latter extend considerably farther in the middle of the cranium than at the sides, they nearly meet together in the centre, where they are only separated by the fossa turcica; which cavity belongs to the middle region, although it is more elevated than the fossa which lies on either side of it.

The middle fossa of the floor cranium hold the anterior convex portions of the posterior lobes of the cerebrum (the middle lobes of some writers.)

The Temporal Fossa.

The flat surface which is observable towards the anterior part at the side of the cranium affords attachment to the temporal, or crathophyse muscle. A white and fowethat prominent line commences behind the outer edge of the orbit, and runs upwards and backwards over the frontal and parietal bones, fo as to describe a semicircle on the side of the skull. From the termination of the parietal bone it turns forwards over the os temporis to the root of the zygoma. This line, the superior edge of the zygoma, and the posterior margin of the os malleus have the strong temporal fascia attached to their surface. The side of the skull within the line, which is obviously compressed or flattened, including a small portion of the os frontis, a very large share of the parietal bone, the whole squamous portion of the temporal bone, a considerable surface of the sphenoid ala, and of the os malleus, gives origin to the fibres of the muscle. The internal orbital process of the cheek-bone separates this fossa from the orbit; and the zygoma is a bony arch at the lower part, where it is deepest, within which the tendon palatini.

The surface of the temporal fossa is much more extensive, and the depression is more strongly marked, in the negro than in the European.

Cavity of the Orbit.

Those deep bony cavities of the face, called the orbits, which hold the organs of vision, are separated from each other by the nose, and are situated under the front of the cranium. They represent in form four-sided pyramids, of which the angles are rounded off; the basis is placed forwards the front, and the apex backwards. The margin or front entrance of the cavity of the orbit has the same square form with rounded angles; and becomesconfined of a superior, inferior, external, and internal margin; to the junction of which to each other, forms the frontal, temporal, malar, and lacrymal angles. The orbit has also four surfaces; a superior, which extends nearly in the horizontal direction, and is concave; an inferior, which shapes very lightly backwards and upwards; an internal gently convex; and an external which is level. They are all very smooth.

The internal surfaces of the two orifices are parallel to each other; while the outer surfaces are situated very obliquely, palling from before backwards and inwards. Hence the axes of the two cavities would join at an angle in the fosa turcica. In consequence of this configuration the eyes command a wider field of vision than they would if the axes were parallel to each other.

Seven bones contribute to form this cavity: the upper surface is formed by the os frontis only; the inner by the os unguis and os planum; the inferior by the superior maxilla, os malleus, and palatii; the outer by the os malleus, and sphenoid bone.

The form of the cavity is subject to considerable variety. It is only in comparatively modern times that the orbits have been described in their true connection and relations. Besides the few remarks which Winckel has made on the subject in the "Memhoires de l'Acad. des Sciences de Paris," 1727; much information may be derived from the 1st chap. of Camper's "Diss. Phyis. de quibufdam oculi partibus. L. B." 1748; and from the 7th chap. of Zinn's immortal work "Decript. Anatomic. ocull. humani." Goutting. 4to. 1755.

Cavities of the Nose.

The bony hollows, on which the olfactory membrane is expanded, are placed between the orbits and below them. Fourteen bones contribute to their formation; viz. all the bones of the upper jaw, excepting the os maxillare, the ethmoid, sphenoid, and frontal bones.

The extent of the cavity from its commencement in front to its termination at the back of the palate, is not very considerable: but it is greatly increased by the numerous cells of the cranium and face, which open into it at different parts. A broad perpendicular septum divides it into a right and left cavity; but this division is generally an unequal one, as the bony partition commonly inclines to one side or the other.

The septum narium is formed by the nasal lamella of the ethmoid bone, and the vomer. The entrance of the nose is constituted by the os nasi and superior maxillare; and, as far as the bony compages are concerned, consists of a single heart-shaped aperture, common to both nostrils. The upper and anterior part of this opening possesses a sharp edge; and
and there is a curved spinous process projecting from its middle and lower part.

The termination of the nasal cavity, or its posterior opening (choana), instead of being common to both nostrils, consists of two apertures; one for each side. They are formed by the internal pterygoid plates of the sphenoid bone, the olfa palate and vomer. Their figure is somewhat oval, and the length exceeds the breadth.

The bottom or floor of the nose, which is concave, is formed by the superior maxilla and olfa palate. The inner surface of each nostril is smooth, uniform, and perpendicular, as being formed by the septum narium. The outer surface is very irregular, chiefly from the projection of the three conchæ or turbinate bones, which hang into the cavity.

By these projecting conchæ three cavities are formed in the nostril, called the canales or meatus narium. The inferior is the largest, and is included between the floor of the nostril, and the inferior turbinate bone. The middle is the space left between the last mentioned part, and the middle concha; and the superior, which is the smallest, is between the middle and superior conchæ. The last of these does not open anteriorly; but the two former communicate with the nostrils in front as well as behind.

The superior surface or roof of the nose is the least extensive of all; and is formed by the cribiform plate of the ethmoid bone only.

The ethmoidal and sphenoidal cæli are open into the superior meatus: the frontal and maxillary sinuses terminate in the middle; and the nasal duct ends in the lower meatus.


General Enumeration of the Foramina, Fissures, Canals, &c. in the entire Cranium.

I. On the external surface.
   a. On the vertex, or upper part of the head.
      1. Foramen parietale for a small artery and vein.
      2. F. sopracocchleus for the frontal nerves and arteries.
      3. F. infracocchleus; the openings of the infraorbital canals for the arteries and nerves of the same name.
      4. Superior opening of the lacrimal canals.
      5. F. orbitalis interna for the nasal branches of the ophthalmic nerves, and the ethmoidal arteries.
      6. F. óptica for the optic nerves and ocular arteries.
      7. Fissura orbitalis superior (foramen lacrarium orbitale) for the 3d, 4th, and 5th pairs of nerves, the ophthalmia branch of the 5th pair, and the ocular veins.
      8. Fissura spheno-palatina, at which the 2d branch of the 5th pair divides.
      9. Inferior orbital, or spheno-maxillary fissure for the passage of the infraorbital nerve.
   b. In the orbit.
      10. Foramen incisivum, or palatinum anterius.
      11. Foramen palatinum posterius for the palatine artery and nerve.

II. On the inner Surface of the Skull.
   a. In the vertex.
      Foramen parietale, mentioned above.
   b. In the basis cranii.
      12. Foramen ovale for the 3d branch of the 5th pair.
      13. Foramen ovale for the 3d branch of the 6th pair.
      14. Two smaller palatine holes for more minute twigs of nerve or artery.
   d. In the ear.
      15. Meatus auditotius externus.
      16. Fissura glensi for the chorda tympani, and origin of the external mallei.
   e. In the basis cranii.
      17. Foramen filiformi for the facial nerve, and an artery and vein.
      18. Foramen ovale for the 3d branch of the 5th pair.
      19. Opening of the pterygoid canal for the Vidian nerve.
      20. Foramen spinosum for the art. meningea medii.
      21. Entrance of the carotid canal for the carotid artery, and a branch of the 6th pair of nerves.
      22. Foramen lacerum in basis cranii (for jugulare) for the jugular vein and par vagum.
      23. Foramen conchobdilium anterius for the nervous lingualis medius.
      25. Foramina molliidea for the passage of veins.
      26. Foramen occipitale magnus for the medulla spinalis, with its coverings; the vertebral arteries; and the nerei accessorii.
   f. In the lower jaw.
      27. Foramen maxillare posterius for a branch of the inferior maxillary nerve, and an artery and vein.
      28. Foramen mentale for the mental nerve.

National varieties in the Form of the Cranium.

It is only of late years that this subject, which offers a most important and interesting field of investigation, has been examined with that attention which it deserves. With the exception of a few defunct observations, which are scattered through the works of different writers, Dampier’s paper, “Sur la differée des grands tronc opiacial dans l’homme, et dans les autres animaux,” in the memoirs of the Royal Academy of Sciences for 1764, contains the first attempt at any general remarks on the subject; and this, indeed, is more important in pointing out the differences between the human structure and that of animals, than in

Defining
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defining the characters of the cranium in the different races of mankind. Camper has attempted a more systematic account of the national forms of the cranium. (See the 1st., vol. of his "Kleine Schriften," his "Naturegehechte des Ouar'a Outang," and particularly the "Dissertation phylique sur les differences réelles que presentent les traits du visage chez les hommes de différents pays et de différents ages," Utrecht, 1791, translated from the original Dutch.) The observations of this illustrious anatomist on the present subject, as on all others which he has treated, are ingenious and interesting; but cannot be considered as even approximating to a systematic account of the national varieties of the skull. He does not appear to have poisseld a sufficient collection of crania for this purpose; and the differences which he has pointed out, regarding merely the various degrees of prominence of the jaws, afford very insufficient criteria for determining the numerous points of distinction which characterise the skulls of different nations. We are indebted to the celebrated Blumenbach of Göttingen for the most complete body of information on this subject: which he has enabled most successfully to illustrate, by means of a collection, containing above a hundred specimens, of the crania of different nations from all parts of the globe. His admirable work, "De generis humani varietae nativa," contains a short sketch of the various formations of the skull in different nations: but he has treated the matter at greater length, and with more minute detail in an express work, where the various crania are represented of their natural size: the book is entitled, "Decades craniorum diversarum nationum illustratus," Göttingen, 1790, 1800, 4to.

Four decades, containing representations of forty crania, have hitherto arrived in this country. The following account will be chiefly derived from the two last-mentioned books.

It is sufficiently obvious that there must be a close connection between the external parts of the face, or the features, and the bony composites which lie under and support thebe. So that we might venture to affirm, that a blind man, if he knew the vital difference which exists between the face of a Calmuck and that of a Negro, would be able to distinguish the crania of these two races of mankind by the mere touch. Nor could you persuade any person, however ignorant of the subject, that either of these skulls belonged to a head, similar to those from which the divine examples of the ancient Greek sculpture were copied. Thus much is clear and undeniable, as to the general habit and appearance of the skull. A more careful analytical investigation of genuine specimens of the crania of different nations promised to throw still further light on the subject of the varieties of the human race. For, when freed from the soft parts; which are least confant and regular in their formation, they exhibit the firm and solid foundation of the head; they can be conveniently handled and examined; considered in various points of view, and compared with each other.

Such a comparison will shew us, that the form of the cranium differs no less than the colour of the skin, or other characters, in different individuals; and that one kind of structure runs by gentle and almost inobservables gradations into another: yet that there is on the whole an undeniable, nay, a very remarkable, confancy of character in the crania of different nations, contributing very essentially to national peculiarities of form, and corresponding exactly to the features which characterise such nations. Hence, anatomists have attempted to lay down some scale of dimensions to which the various forms of the skull might be referred; and by means of which they might be reduced into certain classes. Of these endeavours, the facial line of Camper seems to claim the most attention.

The cranium, being placed laterally, two imaginary lines are drawn on its surface to intersect each other at a particular point. The first proceeds horizontally through the meatus auditories externus, and the floor of the nostrils. The other, or the proper facial line, is continued from the most prominent portion of the forehead above the nose, to the front of the alveolar margin of the upper jaw-bone. From the angle formed at the junction of the other two lines, this excellent anatomist conceived that we might estimate the differences of the cranium in animals, as well as in the various races of mankind. (A further account of the results of its application will be given in the division of this article on the characters which distinguish the human cranium from that of animals.)

This criterion is exposed to some very serious and essential objections. It is sufficiently obvious, that the facial line can at most be applicable to such varieties only of the human race as differ from each other in various degrees of prominence of the jaws; and that it will not at all exhibit the characters of those which vary in the opposite way, viz. in the greater or less breadth of the face. It often happens that crania of the most different nations, which differ toto ccelo from each other on the whole, have the same facial line; and, on the contrary, that skulls of the same nation, which agree in general character, differ very much in the direction of this line. Thus, in the decades of Blumenbach, we have represented the crania of a Negro and of a Pole, which poisseld exactly the same facial line. Yet the general character of the two skulls is most widely different, when the narrow and almost keel-shaped head of the Ethiopian is compared to the broad square form of the Lithuanian. (Deces Altera, tab. 10. Deces Tertia, tab. 22.) There are, on the contrary, in the same work two Negro crania of very different facial lines, which, when viewed in front, betray their Ethiopic origin most inconstantly, by the same characters of a narrow and compressed cranium and arched forehead. (Deces Prima, tab. 7 and 8.) Lately, Camper himself has employed his two lines, in the plates subjoined to his work, in so arbitrary and inconstant a manner, changing frequently the point of contact, on which their whole utility must depend, that he clearly appears to be hesitating and uncertain in their employment.

Blumenbach states, that in the examination and classification of his immense collection of the crania of different nations, he finds it every day more and more difficult, amidst such numerous differences in the proportion and direction of various parts, all of which contribute more or less to the national character, to reduce them to the measurements or angles of any single scale. Since, however, in distinguishing the characters of different crania, such a view will gain the preference to all others, as offers at one glance the most numerous and important points, and such as contribute especially to comparison of national characteristics, he has found by experience that to be the best adapted to this purpose, which is obtained by placing the different crania (including the lower jaws), with the zygomata, in the same perpendicular line, on a table in a row, and contemplating them from behind. When crania are thus arranged, those circumstances which constitute most to the formation of the national character, the direction of the jaws and cheek-bones, the breadth or narrowness of the head, the arched or flat form of the forehead, are all distinctly perceived at one view. This method of considering the cranium is called by Blumenbach norma verticalis. It is exhibited in the three first figures of the second plate of the anatomy of the...
nium, where three heads are represented in this point of view, in order to illustrate the subject. The middle of the three (fig. 1.), distinguished by the symmetry and beauty of all its parts, is that of a Georgian female; the two outer ones are examples of heads differing from this in the opposite extremes. That which is elongated in front (fig. 2.) is the head of a Negress, from the coast of Guinea; the other, which is expanded laterally, and flattened in front (fig. 3.), is the cranium of a Turcoofo, from the north-east of Asia. The margin of the orbits and the zygomata are elegantly contracted in the Georgian; and the jaws are hidden by the symmetrical expansion of the forehead. In the Ethiopians, the maxillary bones, and indeed the whole face, are compressed laterally, and project in front. In the Turcoofo, on the contrary, the ossa alveolaria, and glabellae, are situated on the same horizontal level, and are uncommonly expanded on either side.

The national varieties in the form of the cranium may be considered in the five chief divisions, under which the different nations of mankind have been distributed by Blumenbach. The first of these comprehends the inhabitants of Europe; together with the western Ashtas, or those which are found on this side of the Caspian sea, and the rivers Ob and Ganges; and the northern Africanos: in a word, the inhabitants of the world as known to the ancients. In this, which Blumenbach calls the Causian variety of the human race, the form of the cranium is somewhat globular; the forehead moderately expanded; the cheek-bones narrow, and not prominent, but deflected in a slanting line from the external angular process of the os frontis. The alveolar margin of the jaws is rounded; the front teeth are placed perpendicularly in both jaws. The angle formed by the facial line is 85 degrees.

As a specimen of this variety, we have selected from the third decade of Blumenbach's work the cranium of a Georgian woman; which, on account of the exact symmetry and beauty of its formation, may be regarded as the model of a perfect head. (Anatomy of the Cranium. Plate I, fig. 1.) The form of this head is such as distinguish'd elegance, that it attracts the attention of all who visit the collection in which it is contained. We present the reader with the description of this cranium, in the words of Blumenbach: "Calvaria flobloba, versus tempora paulo compressi; frons modice explanata; offa jugalis angustiora; inde a processu malarii offis frontis levis utrique depressa et retroflexa flexa; arcus supereoriori et inferiori auriculae tuberis lateribus curvati; naso et maxillae alveoli tuberis curva utrumque, cunctis continuisse; limbus alveolaris castigatus; mentum pleniusculum, pulchro rotundatum; labia, in universo capitatis semper abditum nihil aperi, nihil preter modum profilitente, ut non perfecte medium tenuit locum inter bina faciei gentilitie in humano generis extrema; Mongoliae nempe altero, facie compressa, et quasi respu, ac olimento jugali extremo utrique directe in cavitatem umbrarum; altero utriusque faciei, contra tuber curvato et fornicate, ac mandibulis angulis tubarum fornicatis, conficatum." The symmetry and beauty of this Georgian head are further evinced by comparing it with the proportions observed in the invaluable remains of the ancient Greek sculpture. It corresponds exactly with the marble statue of a nymph, in the collection of the late Mr. Townley, of which Blumenbach polished a plaster cast. It tends also to confirm the testimony of the numerous travellers who have unanimously concurred in extolling the beauty of the inhabitants of Georgia, and the neighbouring countries. The expressions of Chardin are so warm and animated on this sub-

ject, that the reader will not be displeased by facing the original passage. "Le sang de Géorgie est le plus beau de l'orient, et je puis dire du monde. Je n'ai pas remarqué sur vilage laissé en ce pays là, parmi l'un et l'autre sexe; mais j'y en ai vu d'angélique. La nature y a répandu sur la plus grand partie des femmes, des graces qu'on ne voit point ailleurs. Je tiens pour impossible, de les regarder sans les aimer. L'on ne peut peindre de plus charmans visages, ni de plus belles tâches, que celles des Géorgiennes." (Vol. I, p. 171, Ed. of 1755.)

Another specimen of this variety (the cranium of a Turk) has been inserted in the first plate of the anatomy of the cranium, on account of a peculiarity in its form, arising probably from artificial causes. (Anatomy of the Cranium, Plate I, fig. 2.) The cranium is here completely globular. The occiput can hardly be said to exist, as the foramen magnum is placed nearly at the posterior part of the basis cranii. The forehead is broad, and the glabellae prominent. The proportions of the face are, on the whole, symmetrical and elegant. The alveolar portion of the upper jaw-bone is singularly short; it does not measure more than the breadth of the little finger under the nose.

The cranium of a Turk, in the possession of the writer of this article, exactly resembles the plate of Blumenbach, (Decas Prima, tab. 5,) from which the engraving in the present work was copied. It corresponds also with the form of the head, as observable in the living subject, and with the most faithful delineations of such persons. This peculiarity of form has been observed by several authors; it is indeed to flanking, that it could hardly have escaped observation. "It appears," says Vefalins, "that most nations have something peculiar in the form of the head. The crania of the Gheoce, and still more remarkably those of the Greeks and Turks, are completely globular in their form. This shape, which they esteem as elegant, and adapted to the turbans, which they wear on the head, is produced by the midwives, at the solicitation of the mothers." (De Corporis humani Fabrica, p. 25, Ed. of 1555.) This statement is confirmed by a letter from baron Aich to Blumenbach, in which he says, that the midwives at Constantinople commonly inquire of the mother, after parturition, what form the head would like to have given to the head of the child; and that they commonly prefer that which results from sub joining the forehead and occiput to a clove compression, as they think that their turbans fit better on the head, when of that shape. (Decas Prima, p. 16.)

The other nations, included under this first division, do not seem to be distinguished in general by any remarkable peculiarities; although some slight characteristics have been pointed out. The cranium is broad and square, and the face flattened, in the Laptander; so that he approaches in that respect to the Mongolian variety. According to Vefalins (loc; cit.) the Germans are generally conspicuous for the breadth of the head, and flattened form of the occiput; because, says he, the children always lie on their backs. The affliged cause does not appear adequate to the production of the effect; yet, that such a form does belong, in some cases, to the German cranium, is proved by a skull in the possession of the writer of this article, which, in its globular form, in the flattened state of the occiput, and in the approximation of the great occipital foramen to the posterior part of the basis cranii, exactly resembles the Turkish cranium. Swemming, however, whose authority on this point cannot be disputed, states that there is no well-marked difference between the German, Swifs, French, Swedish, and Ruffian crania, according to the specimens in his possession; except that the orbits are contracted in the Ruffian, and their margins

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The head, or Mongolian variety, includes those Afriatics, which do not come under the first division, and the inhabitants of the northern parts of America. The head is of a square form; and the check-bones stand out widely to either side. The glabella, and ossa nasi, which are flat and very small, are placed nearly in the same horizontal line with the ossa malarum. There are scarcely any superciliary ridges; the entrance of the nostrils is narrow; the malar fossa forms but a slight excavation. The alveolar edges of the jaws are obtusely arched in front; the chin rather prominent. This formation is most strikingly exhibited in the Mongolian tribes, which are widely scattered over the continent of Asia, and which have generally, but erroneously, been included with some of very different origin and formation under the name of Tartars; whereas the last-mentioned tribes, properly so called, belong to the first division of the human race, the Calmucks, and other Mongolian nations, which overrun the Saracen empire, under Zengis-Khan, about the middle of the sixteenth century, and had entered Europe, are described in the "Hiloria Major," of Matthew Paris, under the name of Tartars, (p. 539, London, 1689, folio); whereas that appellation properly belongs to the western Afriatics, who had been vanquished by the Monguls. The error, however, arising from this source, has been propagated down to the present day, so that in the works of the most approved naturalists, as Buffon and Erxleben, we find the characters of the Mongolian race ascribed to what they call the Tartars. The mistake has not even been detected by the most celebrated and classical modern historians; as Dr. Robertson speaks of Zengis as the emperor of the Tartars ("Hiloria America," vol. 1. p. 45.) The reader, who wishes for further information on this subject, may consult J. F. Fichet "Conjectures de gentes et noms Tartorum," in his "Quaestiones Petropolitane," p. 46 et seq.

We have selected the cranium of the Calmuck from the third decade of Blumenbach to exemplify this variety. (Anatomy of the Cranium, Pl. 1. fig. 4.) The whole formation and proportions of this cranium correspond exactly to the well known Cagnuc physisiognomy; and the represenation perfectly resembles that of the skull delineated by Fichet ("Diss. de mod. quas ova fer vienis accommodant partibus," Lugd. Bat. 1743. 4to. tab. 1.) The strong characters, which are so clearly exhibited in this cranium, are altogether different from those of the head, which Camper has exhibited for that of a Cagnuc, in his work on the facial line. The last-mentioned engraving represents a head, in which the negro character, the very opposite extreme to that of the Cagnuc, is so unequivocally exhibited, that we cannot doubt that the drawing was taken from an African head. The work of Camper contains, therefore, besides European skulls, only two African ones; it must consequently be completely inadequate to give any correct systematic account of the subject.

The third, or Ethiopian variety, includes the Africans, which do not come within the first division. The cranium is narrow, being compressed at the sides, where the temporal fossa is of immense extent. The forehead strongly arched; the check-bones project anteriorly; the nostrils are large; the malar fossa is considerable and deep. The alveolar edges of both jaws stand very much forwards; they are narrow, elongated, and of an elliptical figure. The front teeth of the upper jaw are all one in their position. The lower jaw is large and strong; but the chin, instead of projecting as far as the teeth, as it does in the European, reverts considerably, as in the monkey. The substance of the cranium is generally thick, and the skull is concomitantly heavy. The facial angle is about 70 degrees. A more detailed comparison of the Negro cranium to that of the European may be seen in Sommerring ("De corporis humani fabrica," tom. 1. § 65.) An African head is represented from the decades of Blumenbach in the first plate of the Anatomy of the Cranium, fig. 3. A flight comparison of the negro with the European skull will suffice to shew, that the cranium is much more capacious in the latter than in the former race, consequently that it must possess a larger brain. The lateral comparison of the Ethiopian head, together with the narrow arched forehead compared to the almost globular European cranium, with its broad expanded frontotemporal portion, sufficiently account for this difference. At the same time the bones of the face are proportionally larger in the African; the foramina for the transmission of the nerves are more ample; and, according to Sommerring, the nerves arising from the basis of the brain are more considerable. (Ueber die körperliche Verfassungs des Negers von Europaer. § 56.)

The result of these observations, together with the unequivocal similarity in external form between the African cranium, and that of the monkey, leads us inevitably to the inference that the Negro approximates in structure to those animals. The facts, which we poise on this subject, confirm the conclusion which would naturally be drawn from these premises, that the mental faculties of the Negro are inferior to those of the white nations. Let it not however be conceived that these remarks are intended to degrade the African to a level with brutes, or to justify those who consider them merely as a species of monkey. He is distinguished from all animals by the same grand and constant characters which belong to every variety of the human race. We merely state the obvious inferences deducible from acknowledged facts; and consider that a difference in mental powers cannot afford any stronger argument in proof of a diversity of species, than the numerous distinctions in bodily structure. Indeed, when we find the different races of mankind characterized by such numerous differences in bodily structure, it would be a matter of surprise if no diversity could be discerned in their mental endowments.

The description, which we have given above, of the Negro cranium must be understood in a general sense, and not as universally and unexceptionably applicable. Travellers inform us that several Africans differ from the European features and physiognomy only in colour; so that the peculiar formation of the cranium, on the faith of which some philosophers would class these people as a distinct species, is by no means a constant character.

This diversity of features is proved by delineations of Africans, executed by the most skilful artists; and by the views, which Blumenbach has exhibited, of six African heads, all differing from each other. ("Decas prima," tab. 6, 7, 8. "Decas altera," tab. 17, 18, 19.) These drawings fully justify his conclusion; "genuinos Ethiopum, et craniorum formam specie, non minus cerce, imo vero magis pallium inter fe ipso ab invicem different, quam nonnullorum eorum. mutorum Europorum capitis forma different." "Decas altera," p. 13.

In the two following varieties the form of the cranium is not so strongly characterized, as in the three which we have
have already considered. They form indeed two intermediate gradations, between the European and the Mongolian, on one side, and the African on the other.

The fourth, or American variety, includes all the Americans, excepting the inhabitants of the northern part of the continent, which we have classed with the Mongolian division.

In this variety the checks are broad, but the malar bones are more rounded and arched than in the Mongolian; and not expanded to such an extent on either side, nor posssessing such an angular form. The orbits are generally deep. The form of the forehead and vertex is influenced in many instances by the efforts of art. The cranium is generally smooth.

The two crania, which are exhibited in the first plate of the Anatomy of the Cranium, (figs. 5 & 6,) in illustration of this variety, are taken from the 10th and 20th plates of Blumenbach's work. Both of them display the effects of art in the form of the forehead; but the operation of this life is most universally in that which wants the lower jaw. Two crania, exactly similar to this latter one, are delineated in the ("Memoires de l'Academie des Sciences de Paris," 1749.) by Hauaul; and in the "Journal de Physique," (April 1789, by Arthaud.)

The concurrent reports of several travellers concerning the methods employed by the Caribs to effect this alteration in the shape of the cranium, leave no doubt as to the truth of the fact. Hence we cannot help admiring the sceptical diffidence of various moderns, who have questioned the possibility of imitating these unnatural formations on the cranium. (Sabatier in his "Traite complet d'Anatomie." Camper in his "Differtation sur les differences," &c. and Arthaud in the "Journal de Physique," 1789.) It should appear from the relation of travellers, that the Caribs practised different methods of accomplishing their object; as by tying a plate of wood on the forehead; or by compressing the head between two plates; (Thibault de Champvalon in "Voyage a la Martinique," p. 39.) or by prefigure with the hand. The former is probably the most common method. "The Caribs," says Labat in his "Voyage aux environs de l'Amerique," tom. ii. p. 72, are all well made and proportioned; their features are sufficiently agreeable, excepting the forehead, which appears rather extraordinary, as it is very flat, and, as it were, depressed. These people are not born so, but they force the head to assume that form, by placing on the forehead of the newly born child, a small plate, which they tie firmly behind. This remains until the bones have acquired their confusion; so that the forehead is flattened to such a degree, that they can see almost perpendicularly above them without elevating the head. To remove all further doubt on the subject, the instruments and bandages, by which the prefigure is made, are delineated and described by Dr. Amic of Guadalupe, in the 3rd vol. of the Journal de Physique.

The fifth, or Malay variety, including the inhabitants of the numerous Atlantic islands, and those of the great Pacific ocean, constitute an intermediate link between the European and Negro. The cranium is moderately narrowed at its upper part; the forehead rather expanded; and the upper jaw slightly prominent.

The characters which distinguish the crania of the different varieties are sufficiently striking and constant to be observed in very young subjects. This is shown by the three last plates of the third decade of Blumenbach, which represent specimens of the three first varieties.

Causes of the peculiar national forms of the Cranium.

We cannot, at present, deliver any satisfactory account of the causes of those differences which unquestionably prevail in the form of the cranium in the different varieties of the human species; much less are we able to understand the manner, in which any assigned cause may be supposed to operate in producing its effect. Yet we think it right to lay before the reader Blumenbach's remarks on this point, as they tend, in some degree, to elucidate the subject.

The bones are the most solid parts of the human body, and form a kind of firm support and foundation on which the softer structures rest. Yet physiological experiments, and the phenomena of disease prove, that they are much more subject to change, than the softer parts of the body. Their elements are continually melted down, and removed in an imperceptible manner by the absorbents; while the loss thus occasioned is repaired by the deposition of other particles newly secreted from the blood. This continual change in the bony materials of our body, which is going on from the first period of their formation, occasions them to accommodate themselves to the neighbouring parts, and to become, as it were, formed and fashioned by their action.

The conformation of the head in the more advanced periods of life affords the most unequivocal proof of this circumstance. The internal surface of the cranium exhibits a mould of the brains and convolutions of the brain, to which it was adapted; and the external surface displays the most manifest impressions from the actions of the muscles, as well as traces of the form of the features, the general expression, and configuration of which may be easily conjectured from the view of the moulded cranium.

If then it can be proved that climate has a great effect in modifying the form of the face, (and that it has that effect can be clearly shewn, see Blumenbach's "De generis humani varietate nativa," § 57, ed. 3d,) the same cause must exert a powerful influence on the cranium, and particularly on the bones of the face, although in a less direct way.

Besides the chief and leading cause, other accessory ones may contribute to the same effect. Thus there is no incongruity in allowing that considerable and long continued pressure may have an effect on the bones of the face. The skull of a New Hollander in the possession of Blumenbach ("Decas tercia," tab. 27.) is characterized by a remarkable flatness of the upper jaw, where it contains the incisor and canine teeth. This formation can only be attributed to the whimsical custom which those barbarous have, of wearing ornaments in a perforation of the septum nasi, of such magnitude as to obstruct the nostrils, and prevent them from breathing through those openings.

It happens, however, much more frequently that the bones of the skull receive a peculiar, and, as it may be called, national form, from various artificial causes. Not to mention the flattened occiput of the Germans in the time of Velas-ius, who attributed it to the manner in which children were placed in their cradles, there can be no doubt, as we have already stated, that the form of the forehead in the Carib cranium is owing to artificial prefigure. A similar rage for improving the shape of the head has been very prevalent in the continent of America. The Indians, says Adair, 'Ratten their heads in divers forms; but it is chiefly the crown of the head they depress, in order to beautify themselves, as their wild fancy terms it: for they call us long-heads, by way of contempt.' (History of the American Indians, p. 8.) The method by which they accomplish their purpose is thus described by the same author: "They
fix the tender infant on a kind of cradle, where his feet are titled above a foot higher than a horizontal position; his head bends back into a hole made on purpose to receive it, where he bears the chief part of his weight on the crown of the head, without the small bag of sand, without being in the least able to move himself. By this pressure, and their thus flattening the crown of the head, they consequently make their heads thick, and their faces broad." (p. 9.)

Various other methods have been practiced, both by manual pressure, bandages, and other instruments, for reducing the cranium to certain particular forms, both in ancient times, and in European as well as other more remote nations. We know that such custom has existed formerly, or do exist at present in some parts of Germany, in the Netherlands, among the French and Italians, the inhabitants of the Grecian Archipelago, the Turks, the Macrocephali near the Euxine sea, the modern Sunnaitas, the inhabitants of the Nicobar islands, and particularly in many parts of America, as the inhabitants of Noorka Sound, the Chactaws of Georgia, the tribes of Carolina, the Caribs, the Peruvians, and the Maroon Negroes of the Antilles. For the numerous quotations in which this fact is stated of the above-mentioned nations, the reader is referred to Blumenbach "De Gen. Hum. Var. Nat." p. 216, 218. It is a matter of surprize that any person should have dared to call in question the truth of a fact which is supported by the concurrent testimony of so many eye-witnesses. The practice in question has given rise to the names by which several tribes both in North and South America are distinguished. "The word Onaguaras as applied to a nation of Peru, as well as that of Cambevas, in the language of Brazil, signifies flat-head: for these people have the strange custom of pressing the forehead of their newly-born children between two plates, in order to make them, as they say, resemble the full moon." (Condamin in the "Memoires de l'Acad. des Sciences de Paris," 1745. p. 427.) Hence also the "tétès de bon," and "tétès plates," of Charlevoix. ("Histoire de la Nouvelle France," tom. 3. p. 187, 323.) In further proof of these practices, we find that they have been prohibited by the Spanish ecclesiastical councils. J. S. de Aguirra, in the "Collectio maxima consiliorum omnium Hispaniae et novi orbis." Rome, 1755. fol.) relates a decree which paffed in the third synod of the diocefe of Lima, against the Indian method of deforming their children's heads. "Capientes penitus exiliprire abum, et superficitionem, quibus ludi paflum infantum capita formis imprimit, quas iphi vocant Cado, comas, et palata, admoicumus et praecipitum," &c. &c., recounting various punishments against the delinquents; as, for instance, that a woman who has committed such an offence, "frequentem dominum per continuos decem dies max & veperti pro primâ culpâ; pro feconda vero, pro viginti," &c.

Nevertheless, however clearly the fad fact may be proved, people will still be inclined to doubt what has been often afferted since the time of Hippocrates; viz., that these peculiar forms of the head, produced in the firt infancy by artificial pressure continually practifed for a long feries of generations, have paffed at length, in the progrefs of time, by a kind of hereditary defcent, to the offspring, fo as to have become a second nature. There is a well known paffage in the celebrated work of Hippocrates, "De aeribus, aquis & locis," concerning the Macrocephali, a nation situated near the Euxine sea. "He states that no other people have the cranium of fuch a form as theirs. It was the great object of their ambition to have the head as long as possible: hence arose the practice of moulding with their hands the tender heads of their children. When in its plastic state it might be compared to the "udum & mollu lutum," so as to compel it to assume an elongated form, and of continuing it by means of appropriate bandages and instruments, so as to prevent its growth, except in the direction which they defired. When this custom had been long continued, the peculiar form remained without any farther efforts.

The father of medicine has endeavored to explain this singular phenomenon by his hypothesis of generation, which is nearly similar to that of Buffon. He supposes the genital fluid to be collected from all parts of the body; and hence that the members of the fetus are fashioned according to the form of the parents, from whom this fluid is derived: so that a Macrocephalous father would beget a fon of the fame formation, &c.

The opinion which supposes that artificial forms of the cranium may ultimately be transmitted to the offspring, so as to constitute national characters, has been contradicted by some physiologists. We cannot at present perhaps determine the question satisfactorily on either side. The transmission of other national marks, as peculiar forms of the features, and of organic diseases, as defects of pronunciation, not to mention various instances in which casual mutilations have paffed to the offspring, will induce us to reflect a little before we adopt implicitly the negative side of the question.

We have one remark only to add on this part of the subject; viz., that the differences in the form of the cranium are by no means sufficient to authorize us in assigning the different races of mankind, in which they occur, to species originally different; for they are not more confiderable, nor even so remarkable as some variations which occur in animals confidently of the fame species. Thus the head of the wild boar is widely different from that of the domestic pig. The different breeds of horses and dogs are distinguished by the most striking dilimilarities in the head: in which view the Neapolitan and Hungarian horses may be contrasted. The wild original of the cow possesses large lacrymal fowls, which are completely lost in the domesticated animal. The very singular form of the head in the Padian fowl is a more remarkable deviation from the natural structure than any variation which occurs in the human cranium.

National Peculiarities in the Form of the Teeth.

In the year 1779 Blumenbach discovered a peculiarity in the form of some of the teeth in two Egyptian mummies. The incisors, instead of poifoning their ordinary thin cutting edges, were thick in their bodies, and refembled truncated cones; and the canine teeth were only distinguishable from the incisives by their situation. The fame circumstances have been observed in other specimens; as in a mummy at Cambridge, defcribed by Middleton ("Monumenta Antiqutatis," in his Works, vol. iv. p. 176.) in another at Caffell, (Brüchmann's "Description," Brunswick, 1782, 4to.); and in a third at Stuttgard ("Storr, promodorum Methodi Mammalium," p. 24.) Blumenbach discovery the fame structure in another head of a young mummy, which he opened in London. ("Philosophical Transactions," 1794, part 2.) Thaff rule, he observes, be great differences in the crania of various mummies, when it is considered, that the practice of treating the dead body in this manner prevailed in Egypt for so many ages, during which great vicissitudes occurred in the dominion and inhabitants of the country; and consequently that we cannot reasonably expect to find this formation of the teeth in every specimen. Yet it constitutes a singular variety, and deferves mention, as it may aid in distinguishing the mummies of some particular age or nation. It is difficult to assign a caufe for this peculiarity of conformation. Blumenbach
menbach ascribes it to the kind of food, which, on the authority of Diodorus Siculus, he states to have consisted chiefly of vegetables, roots, &c. Thus, he says, would occasion great mechanical abrasion; which, according to him, is attended with an increased thickness of those organs, both in man and animals. If he means that the teeth grow thicker by this cause, after their first formation, the reader will perceive that the explanation must completely fail; as such a growth is quite incompatible with every fact which we possess concerning the structure and economy of these organs.

A similar formation of the teeth was noticed by Winlow in the cranium of a Greenlander from the isle of Dogs, (Hond-Eyland) on the west coast of Greenland. "The incisors, says this anatomist, are flat from before backwards, and short; instead of having a cutting edge; hence they resemble grinders more than cutting teeth. The gentleman, who presented me with this cranium, laid that the inhabitants of Hond-Eyland eat their meat raw. They move their jaws in a very singular manner, and make several grimaces while chewing and swallowing. It was the observation of this singular spectacle that induced him to seek for an opportunity of discovering whether these inhabitants possess any peculiarity of construction in their jaws or teeth." Memoires de l'Acad. des Sciences de Paris," 1722, p. 323.

This account is confirmed by two Eskimaux crania in the possession of Bummenbach, from Labrador, "Decas Cranior. Tertia," tab. 24, 25, which exhibit the same thickened form and worn appearance of the teeth. It is well known that the Eskimaux are derived from the same race with the Greenlanders, and that their name has its origin from their practice of eating raw flesh.

We doubt much whether there be any real original difference in the form of the teeth in the Inuites just mentioned; and are rather inclined to refer the observed peculiarity of form to the mechanical attrition, which it appears that the teeth had experienced in all cases. We know very well that the incisor teeth are wedge-shaped, and increase gradually in thickness from their cutting margin to the gum. Hence, if one of these organs be half worn away, it will entirely lose its natural appearance as a cutting tooth, and will resemble in form the teeth found in the crania above mentioned.

The alteration of Buffon, Eckelken, and others, that the teeth of the Calmucks are longer, and separated by wider intervals from each other, is contradicted by the specimens of their crania in the possession of Bummenbach.

Some other peculiar shapes of the teeth are produced by artificial means. Thus some tribes of Negroes file them so as to make them conical and sharp (Churchill's "Collection of Voyages," vol. v. p. 139, 143, 385, Philof. Trans. vol. 73. pt. 1, p. 92); some of the Malays destroy a great part of the enamel (Farrell's "Voyage to New Guinea, p. 237. Mariden's "History of Sumatra, p. 46); or make grooves on its surface, (Hawkefow's "Collection of Voyages," vol. iii. p. 345 of the Javanese). Bummenbach states, that he has seen some Chincen and Javanese, who had carefully removed the enamel from the edge of the teeth by means of a file.

Comparison of the Human Skull with that of Animals.

The two organs, which occupy most of the face, are those of smelling and tasting (including the instruments of malification, &c.). In proportion as these parts are more developed, the size of the face compared to that of the cranium, is augmented. On the contrary, when the brain is large, the volume of the cranium is increased in proportion to that of the face. A large cranium and small face indicate therefore a large brain with inconsiderable organs of smelling, tasting, malification, &c.; while a small cranium with a large face shows that these proportions are reversed.

The nature and character of each animal must depend in great measure on the relative energy of its different functions; it is in a manner subdued and mastered by its most powerful extenions. We meet with examples of this daily in the human species; but the differences which can be observed between one man and another in this respect, must be much less than those which occur between animals of different species. The brain is the common centre of the nervous system: all our perceptions are conveyed to this part, as to a senorium commune; and this is the organ by which the mind combines and compares these perceptions, and draws inferences from them—by which in short it reflects and thinks.

We shall find that animals partake in a greater degree of this latter faculty, or at least approach more nearly to it, in proportion as the mass of medullary substance, forming their brain, exceeds that, which constitutes the rest of the nervous system; or, in other words, in proportion as the organ of the mind exceeds those of the senses. Since then the relative proportions of the cranium and face indicate also those of the brain, and the two principal external organs, we shall not be surprised to find that they point out to us, in great measure, the general character of animals; the degree of instinct and docility which they possess; and hence the study of these proportions is of great importance to the naturalist. Man combines by far the largest cranium with the smallest face; and animals deviate from these relations in proportion as they increase in stupidity and ferocity.

One of the most simple methods (though sometimes indeed insufficient) of expressing the relative proportions of these parts, is the facial line, which we have already described. In man only is the face placed perpendicularly under the front of the cranium; so that the facial line is perpendicular. Hence the angle formed between this line, and the horizontal one, which passes through the nose and matus auditorius, is most open, or approaches most nearly to a right angle in the human subject. The face of animals is placed in front of the cranium instead of under it: that cavity is so diminished in size, that its anterior expanded portion, or forehead, is soon lost, as we recede from man. Hence the facial line is oblique; and the facial angle is acute: it becomes more and more so as we descend in the scale from man; and in several birds, in most reptiles and fishes, it is lost altogether, as the cranium and face are completely on a level, and form parts of one horizontal line.

The idea of stupidity is associated, even by the vulgar, with the elongation of the snout, which necessarily lowers the facial line, or renders it more oblique: hence the crane and snipe have become proverbial. On the contrary, when the facial line is elevated by any cause, which does not increase the capacity of the cranium, as in the elephant and owl, by the cells, which separate the two tables, the animal acquires a particular air of intelligence, and gains the credit of qualities, which he does not in reality possess. Hence the latter animal has been selected as the emblem of the goddes of wisdom; and the former is distinguished in the
the Indian language by a name which indicates an opinion that he participates with man in his most distinguishing characteristic, the possession of reason.

The invaluable remains of Grecian art shew that the ancients were well acquainted with these circumstances: they were aware that an elevated facial line formed one of the grand characters of beauty; and indicated a noble and generous nature. Hence they have extended the facial angle to 90 degrees in the representation of men on whom they wished to bestow an august character. And in the statues of their gods and heroes they have carried it beyond a right angle, and made it 100°.

The facial line of the European forms an angle of 80°.
Negro - - - 70°
Oorang-utang - - - 50°
Monkey - - - 40°

These are represented in the second plate of the Anatomy of the Cranium (figs. 4, 5, 6, 7, & 8). In some other mammalia the angle is no more than about 20°.

The boundaries of the facial angle in the human subject are therefore 70° and 80°. A smaller angle than the former constitutes an approach to the monkey. Yet it may be extended beyond the latter, as the Greeks have done in their representations of the deity: here however 100° seems to be the ne plus ultra; beyond which the proportions of the head would appear deformed.

That angle, according to Camper, constitutes the most beautiful countenance, and hence he supposes the Greeks adopted it. "For," says he, "it is certain that no such head was ever met with; and I cannot conceive that any such should have occurred among the Greeks, since neither the Egyptians, from whom they probably descended, nor the Persians, nor the Greeks themselves ever exhibit such a formation on their medals, when they are representing the portrait of any real character. Hence the antient model of beauty does not exist in nature, but is a thing of imaginary creation; it is what Winkelmann calls "boni idealis."

A vertical section of the head, in the longitudinal direction, shews us more completely the relative proportions of the cranium and face. In the European, the area of the seccion of the cranium is four times as large as that of the face; the lower jaw not being included. The proportion of the face is somewhat larger in the Negro; and it increaseth again in the orang-utang. The area of the cranium is about double that of the face in the monkeys; in the baboons, and in most of the carnivorous mammalia, the two parts are nearly equal. The face exceeds the cranium in most of the other orders of mammalia. In the ruminant animals the area of the face is about double that of the cranium, and it is nearly four times as large in the horse.

The outline of the face, when viewed in such a section as we have just mentioned, forms in the human subject a triangle; the longest side of which is the line of junction between the cranium and face. This extends obliquely backwards and downwards from the root of the nose towards the foramen occipitale. The front of the face, or the anterior line of the triangle, is the shortest of the three. The face is so much elongated, even in the monkeys, that the line of junction of the cranium and face is the shortest side of the triangle; and the anterior one is the longest. These proportions become still more considerable in the other mammalia.

The great occipital foramen holds a very different situation in animals from that which it possesses in the human subject; and its position again differs considerably in the various species. These differences arise chiefly from the ordinary attitude of the body, and from the form of the head. The head and neck of man being directed vertically, his head is placed in a state of equilibrium on the vertebral column, in order to facilitate its motions, and to maintain it firmly on the point of support, which it poises in the natural attitude of the body. Hence the great occipital hole is placed in the human subject nearly in the centre of the base cranii; and is very little more distant from the front of the jaws, than from the posterior extremity of the occiput. The position of the head is so favourable for its being held in a state of equilibrium, that if the vertical line of the trunk and neck were continued upwards, it would pass through the top of the head.

The occipital hole differs therefore considerably from that of animals in its direction. Let us draw a line according to the course or level of this opening: it will pass from the posteri- rior edge of the foramen, along the surface of the condyles, and it continued anteriorly, will terminate just under the orbits. It forms in short almost an horizontal line, which inter- sects, nearly at right angles, the vertical line of the body and neck, when the head is held straight, without being inclined forwards or backwards.

In this attitude, the face is in a vertical line parallel to that of the body and neck; and consequently the jaws hardly extend in front beyond the forehead. They are very short in comparison with those of most animals; for the length of the lower maxillary bone of man, measured from the chin to the posterior edge of the condyle is only half the length of the whole head, as taken from the chin to the occiput; and scarcely the ninth part of the height of the body from the anus to the vertex: and about the eighteenth part of the whole length of the body from the top of the head to the feet. This latter point of comparison is however scarcely applicable to the subject; inasmuch as there is hardly any other animal but man, which has the hind legs as long as the trunk, and head taken together, and measured from the vertex to the pubis.

The principal constituent parts of the human structure are the same with those of animals; but there is as much difference in the mode of union, and form of the bones, as in the attitude of man, compared to that of animals. Let us suppose a man to assume the attitude of a quadruped, and that he should attempt to walk on all fours; he will find himself in a very unnatural position. The motions of his arms, legs, hands, feet, head, will be very laborious; and it will be impossible for him to acquire a firm gait and regular progression. The obstacles, which he experiences, arise from the conformation of the pelvis, hands, feet, and head: the latter only come within the scope of the present article.

In proportion as the volume of the brain increases in compar- ison to that of the whole body, so does the occiput become more convex and prominent: the foramen magnum is removed further from the back of the head; and the level of this opening approaches the horizontal direction. Hence, as we have already remarked, it is but little further in man from the extremity of the jaws than from the back of the head, and its direction is nearly horizontal. This position of the opening, which places the head in a state of equilib- rium upon the neck, and brings the face forwards in the natural erect posture, would, if man went on all fours, prevent him from elevating the head sufficiently to see before him, because the motion of the head would be stopped by the projection of the occiput meeting the vertebrae of the neck.

In most animals the great occipital foramen is placed at
the back of the head; the jaws are considerably elongated; the occiput forms no projection beyond this opening, the level of which is in a vertical line, or at least very slightly inclined. Hence the head is connected to the neck by its back part, instead of being articulated, as in man, by the middle of its base; and, instead of being in equilibrium, it hangs to the front of the neck. This structure beffows on quadrupeds the power of using their jaws for feizing what is before them; of elevating them to reach what may be above the head, although the body be placed horizontally; and of touching the ground with the mouth by depressing the head and neck as low as the feet. The latter motion could not be performed by man, even if he were in the attitude of a quadruped; for if he lowered the head to the ground, he would only touch it with the forehead or vertex.

In several animals there is some difference between the foramen magnum, and the posterior extremity of the occiput; but this interval is no where so considerable as in the human subject, and in proportion as it is increased does the direction of the occipital foramen approach more to the horizontal one.

Animals of the monkey kind approach more nearly to the human structure in the position and direction of the occipital foramen than any others. In the orang-utang it is twice as far from the jaws as from the back of the head; and it is considerably inclined downwards, so that a line drawn in its level passes below the lower jaw, instead of going just under the orbit as in man.

The difference in the direction of the foramen may be eliminated by noting the angle formed by the union of a line drawn in the manner above-mentioned, according to the direction of the opening, and another line, running from the posterior edge of the foramen to the inferior margin of the orbit. This angle is of 3° in man, and of 37° in the orang-utang. The length of the jaws in this animal must exceed that of the human subject in the same proportion; the lower maxilla is one fourth of the length of the trunk and head, taken from the vertex to the anus, while in man it is only one twentieth.

The occipital angle is of 47° in the lemmur; it is still greater in the dog; and in the horse it is of 90°, or a right angle, the position of the opening being completely vertical.

The summit of the intermaxillary bone has been set down by Camper as one of the grand characteristics which distinguish the human head from that of other animals. The superior maxillary bones of the human subject are united to each other, and contain the whole of the upper feries of teeth. They are, however, separated in brutes by a third bone of a wedge shape, which contains the incisor teeth, and therefore was called incisivum. It is united by peculiar future to the neighbouring bones.

That man posfesses nothing analogous to the intermaxillary bone of brutes is so clear, that we must be surprized how so excellent an anatomist as Viss-d'Azyr could discover any analogy in the human jaw to the ftructure of quadrupeds. "Memoires de l'Acad. des Sciences de Paris," t. 80. The transversal slit behind the incisor teeth, which is constantly observable in the young fubjeft, and sometimes distinguishable in the adult, was very well known to the older anatomists. But that this fliure could not deferve the name of a future, was very correctly obferved more than two hundred years ago by the acute Fallopius. (See its defcription in the account of the bones of the face.)

Whether all other mammalia, besides the human fubjeft, posfess this bone, is not fo decidedly ascertained, as that man has it not. Blumenbach mentions, that it does not appear in several crania of the genus fimi, which he examined. "De Gen. Hum. var. Nat." p. 38. Neither Tyfon nor Daubenton found it in the orang-utang. However this question may be decided, there can be no doubt that the crania of all the quadrumanous mammals, which are the most anthropomorphous animals, as well as of all other quadrupeds, are distinguished from the human skull by the great length and projection of the jaws.

The teeth of the human subject differ from those of all mammals in being placed close to each other, and arranged in an uniform and unbroken series. The lower incisors are perpendicular, which is altogether a peculiar character of the human head. The camphibii do not project beyond the others, nor are they separated by any intervals from the neighbouring teeth. The molares are furnished with peculiar blunt prominences or tubercles very different from those of any of the monkey kind.

The lower jaw of the human cranium is characterized by three very remarkable circumstances; its peculiar shortness; the prominence of the chin, which arises from the perpendicular position of the lower incisor teeth; and by the form, direction, and mode of articulation of the condyles, which circumstances differ from the structure of all other animals, and clearly show that man is designed by nature to be an omnivorous animal.

**Craniun, in Natural History.** the name of a species of the *Anoum*, with a smooth ventrocofe shell, transversely flattened, found in the Norwegian sea. Also, a species of *Alcyonium*, tubiform, white, and fetoine; found in the faro fca, with the fpecies *Campechianum*.

**Crane, in Sea Language.** A ship is said to be crane-fled, when, for want of a fufficient quantity of ballast or cargo, she cannot bear her fais, or can bear but small fail without danger of overfetting.

She is said to be crane by the ground, when her floor is fo narrow, that she cannot be brought on ground without danger.

**Crane is also an iron brace which fupports the lanthorns on the poop-quarters, &c.**

**CRANMER, Thomas, in Biography, the most eminent prelate that ever filled the see of Canterbury, was born July 21, 1489, at Allerton, in Nottinghamshire. At the age of 14 he was admitted to Eton College, Cambridge. By his great diligence in his academical studies, and by his zeal in the purfuit of biblical knowledge, he acquired very high reputation, and quickly obtained a fellowship and the degree of M.A. The former he soon left by marrying; but his wife dying within a year of his entering the holy state, he was again admitted fellow of his college, a rare circumstance, and at the fame time a fignal proof of the respect and affection in which he was held by his friends. By Cardinal Wolsey he was offered a fellowship at Oxford, which he did not accept; and in 1525 he took the degree of D.D., and was appointed theological lecturer and examiner: in both capacities he rendered the most efficient services to the interests of learning and religion. He had not, however, long retained these offices before the plague obliged him to retire for fafety to Waltham Abbey, where, meeting with Dr. Fox, the king's almoner, and Dr. Stephen Gardiner, the secretary, the conversation turned on the subject of the king's divorce from Queen Catherine. In giving an opinion on this subject, he laid the question must be reduced to this: "Whether a man may marry his brother's wife?"**
wife;" which might be discussed and decided by the authority of scripture, in this country as well as at Rome. When Henry was informed of this reply, he not only applauded Cranmer's sagacity, affirming that "he had got the right bow by the car," but defied to be introduced to him. He immediately appointed him one of his chaplains, and commanded him to write in justification of the intended divorce. The doctor quickly produced a work which completely coincided with the monarch's views, by proving from the scriptures, and by an appeal to the decisions of general councils and ancient writers, that the pope possesses no power to dispense with the word of God. Cranmer averred the pope's supremacy at Cambridge, and made so many covert hints to his opinion, that he was sent by his sovereign to debate the matter on the continent with the divines of France, Italy, and Germany. While on this mission he married a second wife at Nuremberg; and on his return in 1533, he was raised to the high office of archbishop of Canterbury, with the sole view, no doubt, of sanctioning the conduct of the king; and accordingly in the following May, he pronounced the sentence of divorce between Henry VIII. and Catherine, and pronounced the king's marriage with Anne Boleyn. These acts excited the vengeance of the pope, who threatened to excommunicate the archbishop; but he had already set at defiance his power, by refusing to accept his office, unless it were bestowed immediately by his own sovereign without the intervention of his holiness. He therefore heard the denunciations uttered against him, without anxiety, and exerted all his powers in behalf of the Reformation. In the same year he was very instrumental in procuring an act of parliament which abolished for ever the pope's supremacy in these realms, and which declared the king supreme head of the church. His next objects were, the translation of the scriptures into English, and the dissolution of monasteries, which had long been regarded as incompatible with those principles of virtue and religion, in behalf of which they had been originally instituted. In these efforts the prince was successful, and having already joined the king in so many of his projects, he was obliged to follow him still farther, and in 1536 he pronounced a second divorce between Henry and Anne Boleyn. In all the changes and reforms introduced by the king, his sole object was the acquisition of new power and increased wealth, and when he had secured his wishes in this respect, he began to counteract farther innovations, and caused an act to be passed which impeded the progress of reformation during the remainder of his reign. By a provision in this law, the archbishop was obliged to banish his wife to her native home. With this act of violence Cranmer did not comply without exhibiting a manly opposition, which excited the admiration and respect of the monarch; though his enemies fondly imagined it would effect his ruin. In 1540 he was appointed a commissioner for inspecting into matters of religion, and for explaining some of its chief doctrines: the result of this commission was the circulation of a work, chiefly composed by Cranmer, entitled "A necessary Exposition of any Christian Man." After the death of Thomas Cromwell, earl of Essex, in whose behalf he interceded with all the warmth of friendship, though ineffectually, he retired from court, and gave himself up to his own affairs as an ecclesiastic. The high rank to which he had attained, rendered him an object of envy to those less honoured, and who eagerly sought his ruin; but in every change he was protected by the king, who eventually appointed him one of the executors of his last will, and one of the regents of the kingdom.

Upon the demise of Henry, in 1546, Cranmer crowned the young king, and was, during the short reign of that sovereign, very zealous in promoting the reformation. He took a very active part in compiling, correcting, and establishing the liturgy, and in compiling the 39 articles. At this period, it cannot be denied, the archbishop exercised his power with cruelty, and without that regard to the rights of conscience in others, which he had formerly claimed for himself. He sanctioned, and was even the abettor of persecution, in the cases of Gardner bishop of Winchester, and Bonner bishop of London; and by his authority and approbation other considerable men of the Romish church were imprisoned and perfecuted, on account of their opinions and attachment to rites and ceremonies, against which he had set his face. It does not appear what part he took in the persecution of Lambert and Attew during the reign of Henry, who were cruelly murdered for avowing doctrines to which Cranmer himself afterwards adhered: but his conduct in regard to Joan Bocher and George Van Paris cannot be too strongly reprobated. These, says Mr. Gilpin, were accused, one for maintaining, and the other for denying the divinity of Christ. The woman was highly respected, and zealously attached to the reading and explaining of those scriptures which Cranmer had caused to be put into her hands, in common with those of her countrymen. He was the cause, therefore, as well as the instrument of her cruel death. The good woman faw, or thought she saw, that Jefus of Nazareth was a man, like other men, only in the high degree of inspiration which he had from his Almighty Father. Being exhorted to abjure to damnable doctrine, she refused, and preferred death rather than life on such ignominious terms, and she was accordingly committed to the flames. To the honour of the young king, and the disgrace of his minister, let it be noted, that the mind of the former revolted against the signing of the warrant for Bocher's execution, and it was only by Cranmer's persuasions and importance that he was brought to yield. Even then he depreciated the act, and with tears declared, that if he did wrong, the archbishop must answer for it at the tribunal of heaven.

In the year 1553, he flew himself adverse to the settlement of the crown on Lady Jane Grey, though he was at length persuaded to set his hand to it; and on the death of Edward he avowedly excommunicated her cause, and became a member of her council. The triumph of Mary forewarned him that he had little to hope for. Clemency, and even justice, were well nigh banished from the new court, and the friends of Cranmer urged him to seek safety by retiring to a foreign country. But feeling that the dignity of his character, and the cause of the reformation required him to make a stand, he replied it would not be fit for him to leave his post, and thus, as it were, disavow the changes that had been made, by his means, in religion, during the late reign. It was now, probably, that the prediction of Christ to Peter must meet the mind of Cranmer: "They that take the sword Shall perish by the sword."

He had been a persecutor, and must fall by the same means. He was tried on a charge of high treason, in joining the party of Lady Jane; of this he was convicted, when his fee was declared vacant, and the fruits of it sequestrated. He supplicated for pardon, which was granted, but only that he might be tried on the charge of heresy, of which he was also convicted. As yet the pope's authority had not been re-established in England, and it was thought necessary to repeat the mock trial, on an indictment charging him with blasphemy, perjury, incontinency, and heresy. On this occasion Cranmer refused every testimony.
mony of respect to the representative of the people, and defended himself with ability, and much firmness. But reason had no effect with judges who were endeavouring to banish reason from the world: he was condemned, and most cruelly treated, especially by Bonner, whose name has been transmitted to posterity with the infamy it merits. The archbishop bore all with an undaunted heroism, till the prospect of death overcame his virtuous resolution; then he signed a recantation of his religious principles. His enemies having thus obtained a signal victory, left no time in printing and dispersing everywhere the recantation, determined, at the same time, to take away his life. On the 24th of February, a writ was signed for burning Cranmer, and on the 24th of March he was brought to St. Mary's church, Oxford, to hear a discourse, previously to the fatal tragedy. Dr Cole, provost of Eton, was appointed to preach on the occasion; while he was haranguing the audience, the unfortunate prisoner expressed the greatest contrition for having been betrayed into the dastardly act of recantation, but the spectators supposed that the tears which he shed were on account of his former holy. At length, Cole, with a malignant condescension, desired him to make an open profession of his faith; when Cranmer avowed his belief in all that had been taught by Christ and his apostles, in the New Testament, and by the prophets in the Old. "And now," added he, "I come to that which hath so much troubled my conscience, more than any thing I ever did or said in my whole life; and that is the setting abroad a writing contrary to the truth, which I here now renounce, as standing written with my hand contrary to the truth which I thought in my heart; and written for fear of death, and to save my life if it might be. And forasmuch as my hand offended, contrary to the dictates of my heart, my hand shall be first punished." Annihiliated and enraged at this unexpected declaration, the bigotted and savage mob dragged him to the place of martyrdom, where he was quickly fastened to the stake; here his resolution was undaunted, and he nobly obliterated the stain which had been made upon his character by recantation. "This is the hand that wrote it," says he, "and therefore it shall first suffer punishment." He accordingly stretched his right hand into the flame, where he kept it unmoved till it was consumed. In a few minutes the fire attacked his vital parts, and he died repeating the words of the martyr Stephen, "Lord Jesus, receive my spirit." Such was the end of Thomas Cranmer, in the 67th year of his age: that he was a great and good man in many respects none will deny; but it would be foolish, and to pottency unjustifiable, to attempt to conceal his faults. He was, says Mr Hume, "undoubtedly a man of merit, polished of learning and capacity, and adorned with candour, sincerity, and benevolence, and all those virtues which were fitted to render him useful and amiable in society. His moral qualities procured him universal respect, and the courage of his martyrdom, though he fell short of the rigid inflexibility observed in many, made him the hero of the Protestant party." There are, however, others who can better appreciate the worth of the archbishop than our historian. Mr. Gilpin, speaking of the noble head which Cranmer made against the king with regard to the fix articles, says, "The good archbishop never appeared in a more truly Christian light, than on this occasion. In the midst of so general a defection, he alone made a stand. Three days he maintained his ground, and baffled the arguments of all opposers. But argument was not their weapon, and the archbishop saw himself obliged to sink under superior power. Henry ordered him to leave the house. The private refused. "It was God's business," he said, "and not man's;" and, when he could do no more, he boldly entered his protest. Such an instance of fortitude is sufficient to wipe off many of those coldly stains which have fastened on his memory." His behaviour as a Christian, in the forgiveness of injuries, which is the touchstone of pure principles, was exemplified in the cause of the duke of Norfolk. "The last act of this reign," says Gilpin, "was an act of blood, and gave the archbishop a noble opportunity of shewing how well he had learned to forgive an enemy." Henry had ordered the duke of Norfolk to be attained contrary to justice. No man had been more the enemy of Cranmer than the duke; yet, so far was he from exulting in the opportunity of vengeance, that he viewed the measure with horror, and opposed the bill with all his might; and, when his opposition was vain, he left the house with indignation, and retired to Croydon. To men of learning, Cranmer was a generous patron and friend; he maintained an intimate and constant correspondence with most of the distinguished scholars in Europe. He was a great economist of his time, riling generally, at all feasts, at the banquet, and employing every hour with indolent and care. In his manner he was pleasing and amiable, mild and cheerful in his temper, and given to hospitality, often beyond the apparent means which he enjoyed. As a preacher, he is said to have been plain, practical, and impressive; and the character of his writings is that they are more sensible and nervous, than elegant and polished. He left behind him a widow and children, that had been amply provided for by Henry VIII., who, without any solicitation, gave him a considerable grant from the abbey of Welbeck in Nottinghamshire, which his family enjoyed after his decease. King Edward made some addition to his private fortune, and his heirs were restored in blood by an act of parliament, passed in the reign of Elizabeth. The writings of the archbishop are not despised with the marks of great superiority; though some have been translated into Latin by Young and Mr John Cheke. Some posthumous pieces were published by Strype and Burnet, and there remain, in the library at Lambeth, two large volumes of MSS. chiefly collections from the Scriptures, and the writings of the Fathers. Cranmer was, according to Burnet, very anxious in obtaining the lustre of ancient writers upon all the topics of religion, by which he might be directed in the cause of the reformation. Biog. Brit. CRANNICHFIELD, in Geography, a small town of Germany, in the duchy of Saxe-Gotha, situated on the river Illn, and surrounded on all sides by mountains. It has 250 houses, and 1350 inhabitants, most of whom are tradesmen and manufacturers, chiefly baleet-makers and blockmakers. CRANNY, in the Glafs Trade, a round iron, whereas the workmen in the glass-houses roll the glass, to make the neck of it small. CRANON, in Ancient Geography, a town of Thessaly, in the valley of Tempe; call of Pharsale, and well of the lake Bugeito, 100 fathoms south-wesl of Tyrrnon—A.D.s, a town of Greece, in Athanaia, towards the source of the Achelous. CRANSAC, in Geography, a small town of France, in the department of the Aveyron, fifteen miles from Rodez, famous for its mineral waters. The springs are in the midst of arid mountains which emit clouds of black smoke of rather a disagreeable smell. They have not all the same properties. That which is called the new spring is most frequently used. The water is cold, limpid, and without smell; it takes like a slight solution of sulphate of iron. It appears that it holds small sallie matter, since it has been found that
CRAON, in Geography, a small town of France, in the department of Mayenne, chief place of a canton, in the district of Chateauneuf. It has 1494, and the canton itself 12,746 inhabitants. The latter comprises 15 communes, on a territorial extent of 240 kilometres.—Allo, a castle, and formerly a principality, in the department of Meurthe; 3 miles E. of Lunville.

CRAONNE, a small town of France, in the department of Aisne, 12 miles S.E. of Laon. It is the chief place of a canton, in the district of Laon, with a population of 830 individuals. The canton itself has 40 communes, and 12,148 inhabitants, upon a territorial extent of 207 kilometres.

CRAP, in Agriculture, a name sometimes given by farmers in some districts to ray-gras, rye-gras, or red darning (loium perenne), and in others to buck-wheat (polygnum fagozy) ; the former of which is often very troublesome among wheat crops.

CRAPACH, or CRAPACH, in Geography, is the name of that chain of mountains called the Carpiniun hills, which form the western boundaries of Hungary, and separate Transylvania from Galicia. They are now called, in the language of the county, Tatras.

CRAPE, a light transparent stuff, in manner of gauze; made of raw silk, gummed and twisted on the mill; woven without crofting, and much used in mourning.

Cranes are either crepied, i.e. crepised; or smooth: the first double, expreasing a closer mourning; the latter single, used for that less deep. Note, White is reserved for young people, or those devoted to virginity.

The silk destined for the first is more twisted than that for the second; it being the greater or less degree of twisting, especially of the warp, which produces the crepising given it when taken out of the loom, steeped in clear water, and rubbed with a piece of wax for the purpose.

Crepes are all dyed raw. The invention of this stuff came originally from Bologna; but the chief manufacture of it is said to be at Lyons.

History tells us, that St. Bathilda, queen of France, made fine crepe, crepe, of gold and silver, to lay over the body of St. Eliza. The Balladists own they cannot find what this crepe was. Binet says, it was a frame to cover the body of the saint; but others, with reason, take it to be a transparent stuff, through which the body might be seen; and that this was the crepe whence our word crepe was formed.

CRAPANO, in Geography, a town of Naples; 20 miles W. of Vieja.

CRAPONNE, a town of France, in the department of the Upper Loire, 15 miles N. of Le Puy. It is the chief place of a canton, in the district of Le Puy, and contains 3293 inhabitants. The canton itself has but 6 communes, and a population of 7956 individuals, upon a territorial extent of 127 kilometres and a half.—Allo, a canal, in the department of the Bouches du Rhône, fed with the water of the river Durance; which, after having traversed and fertilized the plain called La Crou d'Arles, falls into the Rhône at Arles. It is not navigable, but it serves to let a great number of mills in motion.

CRAPULATA, a surfeit by over-eating and drinking. See SURFEIT.

CRASHAW, Richard, in Biography, an English poet, was the son of a clergyman, and educated first at the Charterhouse, and then at Pembroke-hall and Peter-houfe, Cambridge, of which hall he was a fellow in the year 1637. At college he was distinguished for his talents in poetry, Latin as well as English; but being a man of strict integrity, he submitted,
mitted, in 1644, to expulsion from the university. He was a poet and a botanist. He contributed to the Botany society and the Linnean Society. His works include "The Botany, the Temperament of Plants, and other Poems." He is known for his contributions to the study of botany and his work on the "Craspedaria," which is a type of plant. His "Craspedaria" is described as a "fringe" plant with a cylindrical body. He was also known for his work on the "Craspedium," which is a type of plant with a roundish body. His work was influential in the study of botany and helped to establish the foundation for modern botanical research.

CRASSA, in Anatomy, is one of the two parts into which blood is divided. The other part is the "Craspedium." Crassus is also known for his work on the "Craspedaria," which is a type of plant with a cylindrical body. His work was influential in the study of botany and helped to establish the foundation for modern botanical research.
erect, cylindrical, with two or three branches near the top, entirely covered with leaves except where the bottom, where the remaining leaves of the leaves give at the appearance of being jointed. Leaves nearly an inch and half long, lanceolate, very acute, erect, in pairs. Flowers yellowish, erect, peduncled, clustered, in a branched terminal corymb; petals erect, lanceolate, a little longer than the calyx, very acute. A native of the Cape of Good Hope. C. pulchra. Linn. jun. 180. Mart. 16. Wildl. 1. Thumb. Prod. 55. "Leaves connate, egg-shaped, acute, villous; stem connate; flowers in a corymb." Stem about seven inches high, red, filiform, erect, smooth, branched; branches somewhat whorled, in three, subdivided, pubescent. Leaves thick, spreading, the length of the internodes, flat-topped above, gibbous underneath. Corymb compound, trichotomous.

CRASSULA.

"Stems cylindrical, a foot high or more, leafy on the upper part, a little branched, weak, inclining or procumbent unless supported. Leaves in distant pairs, about an inch and half long, and nine lines broad, flaky, almost flat, narrowed at the bafe, green, smooth. Flowers in an oblong panicle, small, greenish-white, never expanding; common peduncle rather long, cylindrical, almoft naked; petals ending in a remarkable point. A native of Africa. 20. C. obtusifolia. Linn. Mant. 61. Mart. 10. Lam. 10. Willd. 18. Thunb. Prod. 56. "Leaves opposit, somewhat lanceolate, sharp-edged, approximate." Similar to the preceding in the sharp edges of its leaves and the character of its flowers, but it has a shorter item, and its leaves are nearer together. Stem three or four inches high, closely branched from the bafe. Leaves near two inches long, five or six inches broad, a little convex underneath. A native of the Cape of Good Hope. 21. C. portulacea. Lam. 12. "Leaves oval, flaky, reftembling those of purslane, opposite; item arborescent, very thick." The habit of portulacaria afric (crassula portulacaria; Linn.), but is much larger, and has not obtuse leaves. Stem four feet high, thicker than a man's arm towards the bafe; branches cylindrical, flaky, smooth, panicled, leafty. Leaves about an inch and half long, an inch broad, rather acute, somewhat flary at the edges, a little furmin yellowish-green. Flowers rather large, pale rose-coloured, in a terminal peduncled cyme or umbel; calyx short; petals narrow, linear-lanceolate, expanding; germs feabrous. A native of Africa. 22. C. obliqua. Mart. 56. Willd. 20. Hort. Kew. 393. (C. ovata; Mill.) "Leaves opposite, egg-shaped, oblique, quite entire, acute, dilated, somewhat cartilaginous at the edge." Stem near three feet high, much branched. Leaves of a lively green, ha'f embracing the item. A native of the Cape of Good Hope. 23. C. spinulata. Mart. 60. Willd. 21. Thunb. Prod. 57. Hort. Kew. 1. 395. "Leaves petaled, croundate-rotund, rather acute, crenate, corymb forming a panicle." A native of the Cape of Good Hope. 24. C. cylindracea. Tree crassul. Lam. 13. Jucq. Mil. 2. 205. tab. 19. Bot. Mag. 384. (C. arbo-recens; Willd. 26. Mill.) "Leaves roundish, flaky, dotted above; item arborescent." The habit of corydion orbiculata. Stem two feet high or more, very thick, erect, branched near the top; branches greenish or reddish, cylindrical, flaky, smooth, leafy. Leaves opposite, glaucous with purplc edges, a little convex underneath, more than an inch and half in diameter. Flowers reddish-white, in a terminal panicled cyme; some of them are quadrifid. A native of Africa. A singularity of this species is its indispotension to flowcr. Mr. Fairbain informed the late Mr. Curtis, that he ne'er saw it produce blossoms in Chelsea garden till the summer of 1797. Mr. Miller never saw it in flower; nor does it appear that the late Mr. Atton ever did. Bot. Mag. 25. C. punctata. Linn. Sup. Pl. 14. Mart. 60. Willd. 22. (C. peraffa; Lam. 14.) "Leaves opposite, egg-shaped, dotted, ciliated; lower ones oblong." Linn. "Leaves connate-perfoliate, approximate, heart-shaped, dotted, quite smooth, purple at the edges." Lam. Stem cylindrical, even-lurfaced, simple. Leaves opposite, in two rows, oblong, fleshy, flaky, sprinkled with concave dots, convex underneath, very tenderly ciliated; floral leaves egg-shaped. Coryms auxiliary, very short, fallygiate. Carollia campanulata, white, with a reflexed border; anthers purple. Linn. La Mairc doubts whether Lineanus saw his plant, because he makes no mention of the very peculiar growth of its leaves, and moreover describes those of his punctata as ciliated, growing in two rows, with the lower ones oblong; characters which himself has not found. He gives the following description of his perfect. Stem from six to ten inches long, flender, fleshy, unable to support itself on account of the weight of the leaves, cylindrical, hard, smooth, simple. Leaves almost heart-shaped, to connate that each pair seems to be only a single elliptical leaf, a little pointed at each end, slightly concave and dotted above, somewhat convex underneath, glaucous, with a very smooth purple border. These leaves, or pairs of leaves, are placed very near together, and seem slung on the stem, which runs through their centre in the manner of an axis; the lower ones are the smallest. A native of Africa, cultivated in the botanic garden at Paris. 26. C. leucocephaloides. Lam. 15. (C. pyramidalis; Linn. jun. Mart. 40. Willd. 38?) "Leaves small, ovate-acute, margined, inbricated in four rows, entirely covering the stem and branches." Lam. "Leaves connate, egg-shaped, obtuse, in four rows, incumbent; heads of flowers fleshy." Linn. jun. Stems from seven to ten inches high, the thicknes of a goose-quill, fame what branched, rather f-fl. Leaves convex at the back, a little flattened at the sides fo as to produce the appearance of a border, fleshy, flaky, green. To habit rather resembling a lycopodium than a crassula. Lam. A native of Africa. 27. C. marginalis. Mart. 61. Willd. 23. Hort. Kew. 1. 396. "Leaves heart-shaped, perforate, acuminate, flat, spreading, dotted within the margin. A native of the Cape of Good Hope. 28. C. hällen. Mart. 62. Willd. 25. Hort. Kew. 1. 496. Smith Exot. Bot. tab. 33. "Leaves egg-shaped, attenuated at the bafe, connate, quite entire, with a row of dots within the margin; cymes paniued." Whole plant smooth. Stem much branched, cylindrical, leafy. Leaves crowded, crossing each other in pairs, thick, pointed. Flowers white, in a terminal panicle; anthers rofe-coloured; stamens at the base of the germ scarcely perceptible; petals, flamin, and germs often fix. Dr. Smith. A native of the Cape of Good Hope. 29. C. cordata. Linn. jun. Supp. 189. Mart. 35. Willd. 24. Hort. Kew. 1. 396. "Leaves petaled, heart-shaped, obtuse, quite entire; cymes paniued." A native of the Cape of Good Hope. 30. C. rupestris. Linn. jun. Supp. 389- Mart. 43. Willd. 27. Thunb. Prod. 56. "Leaves connate, egg-shaped, entire, smooth; corymb supra-decumbent. Stem three inches high or more, cylindrical, branched. Leaves alternately opposite, acute, a little concave above, convex, and keeled underneath, approximate, longer than the internodes, green, with a reddish margin. Flowers in trichotomous fallagine corymbs; peduncles and pedicels smooth, white, tinged with purple; bracte minute, white, egg-shaped under each pedicel. A native of the Cape of Good Hope. 31. C. hookiana. Lam. 16. "Leaves opposite, petioled, somewhat heart-shaped, finely crenate, shining above; items branched, weak." Stem sometimes a foot long, smooth; upper part of the branches green, and somewhat herbaceous. Leaves seldom more than six lines broad, flaky, flat above, with a flight furrow, which is continued along the petiole, bright green. Flowers white within, purplish on the outside, small, expanding, in a peduncled nearly terminal cyme; petals narrow, acute, much longer than the calxes. A native of Africa. 32. C. prostrica. Linn. jun. Supp. 151. Mart. 13. Lam. 17. Willd. 26. Lour. Cochin 131. "Leaves pinnated: item arborescent." Stem refulcent, even-lurfaced, with alternate branches. Leaves alternately petioled; pinnated; leylxts seven or nine, petioled, heart-shaped, quite entire, acute, even-lurfaced; petals thickened at the bafe. Flowers red, in an axillary panicle, shorter than the leaves. A native of China.

** Her-
**Herbaceous.**

CRASSULA.

ducales and pedicels, like the leaves, but smaller. A native of the Cape of Good Hope. 52. C. umbellata. Mart. 64. Jacq. Collect. iv. 172. Icon. Rat. 2. "Leaves perfoliate, roundish; racemes axillary and terminal; upper pedicules in whorls. Root perennial. Whole plant smooth. Stem one or two, about seven inches high, the thickens of a quill, nearly erect, cylindrical. feilly, pale flesh coloured, almost pelletaceous, simple. Root-stem more or less flattened; flowers white to rose, the largest three inches in diameter, convex, repand, brittle, green, with pale rays above, red-purple underneath. Racemes to each leaf two, erect, slender, opposite, from one inch to two inches long. Flowers white within, flesh-coloured without, small, most commonly with six filaments and six styles. A native of the Cape of Good Hope. 51. C. foliata. Linn. Jun. Supp. 189. Mart. 41. Wildl. 47. Thunb. Prod. 55. "Leaves connate, linear-awl-shaped; stem nearly half-erect; flower whorls more remote." Stem about six inches high, cylindrical, erect, smooth. Root-leaves a finger's length, erect, concave above, convex underneath, smooth, much crowded; stem-leaves opposite, smaller.


Obi. Jullieu, disregarding the number of flaminis, has referred all the tubular species to cotyledon.

Crassula decumbens, inamis, natans et umbellata; Thumb. See Tilla.

Crassula fruticosa; Mill. See Othonia tenuefima.

Crassula portulacaria; Linn. See Portulaca Afra.

Propagation and Culture.—Most of the species are hardy, and may be treated like the melembrophyntums and other hardier kinds of succulent plants, but should not have much water: and some of them, particularly C. coccinea, and C. perfoliata, must not be so long exposed to the open air in summer, but removed early to a warm, dry glass case.

Crassula, in Gardening, comprises plants of the succulent kind for the green-house and flower collections. Of which the species cultivated are the scarlet flowered crassula (C. coccinea,) the perfoliate shrubby crassula (C. perfoliata,) the sharp leaved crassula (C. coccinea,) the dotted leaved crassula (C. puntilata,) the naked flaked crassula (C. nudicaulis,) hairy crassula (C. orbicularis.) Besides which there are several other species may be cultivated.

Method of Culture.—Of these plants—the first three sorts are capable of being easily increased, by planting the cuttings of the stems and branches in the later spring and summer months. After having been exposed in a dry situation for a few days, to heal over the cut parts, in pots filled with sandy earth planting them in the bark-bed of the flower, or in a frame shaded from the sun. When well rooted, they should be removed into separate pots and be replaced in the same situation till fully established, when they may be removed into the green-house, where they should have a sunny situation in winter and but little water, as it is apt to deflower them.

The other sorts may be increased by planting the offsets from the roots in the same manner as directed above.

These being plants of a succulent nature in their stems, branches, and leaves, as well as curious in their growth, they afford much variety among collections of other plants of similar kinds. They are capable in dry warm situations of bearing the open air in the summer season.

Crassus, Lucius Licinius, in Biography, an eminent orator of Rome, born, B. C. about 140, was brought into notice principally by the part that he took in the impeachment of Papirius Carbo, which he managed with the utmost skill, displaying, in the pleadings, the most consummate elegance. Crassus from this circumstance immediately rose to the highest reputation. At the age of 27 he defended the veiled virgin Licinia, accused of unchastity. He was the advocate of many very popular measures; and he paid with distinguished honour through all the principal offices
CRASSUS, Marcus Licinius, a distinguished Roman, who must hereafter be noticed in the article Rome, as taking a very leading part in her affairs in the latter days of the republic, but who nevertheless cannot be passed over in our biographical sketches. He was defended from a family of high rank; enjoyed all the advantages of a liberal education, and selected as his principal pursuits, oratory, history, and the philosophy of the age. His father and mother were slaughtered under the tyrannies of Marius and Cinna, and he himself escaped by leaving his country for Spain, where he was concealed in a cave for the space of eight months. On the death of Cinna, he joined Sylla, whom he served with zeal and fidelity. During the civil wars Crassus enriched himself by means not at all honourable. He was praetor, B.C. 71, and was appointed to the command of the army, in which office he exercised much severity against those who neglected to perform their duty. In the following year Crassus was associated with Pompey in the confederation. They had been long rivals, and were now exceedingly jealous of each other's authority; a seeming reconciliation took place, which was probably not sincere on the part of either. Caesar, on his return from Spain, found the confudis at open variance; he, however, soon convinced them that it was the mutual interest of all three to come to an agreement, and this was the foundation of that triumvirate which superceded and demolished all the powers of the old constitution. In the year 53, Crassus and Pompey were again confederates, and in the distribution of the provinces, Syria fell to the lot of Crassus, which afforded him new opportunities of enriching himself, by the plunder of the oppressed inhabitants. He proceeded to Syria, marched to Jerusalem, and seized upon all the treasures of the temple which the moderation of Pompey had spared. He next crossed the Euphrates, invaded the Persian territories, and leaving garrisons in the principal cities which fell into his power, he recrossed the river and took up winter quarters in Syria. Here he was safely and insaiously employed in plundering the temples, and razing money by every species of extortion, while to gratify himself with his army and to secure their affection, he suffered the soldiers to indulge in every kind of licentiousness. At the proper season he passed the Euphrates a second time, with 40,000 men. Crassus his lieutenant urged him by all means to keep close to the bank of the river, but the king of Edessa, Abgarus, with a view of betraying the Romans, persuaded Crassus to take an inland course. He decided on this course, and led the army over barren plains, where they endured extreme hardships from thirst and fatigue, till they came in sight of the Parthian host. Scarcely had Crassus drawn up his legion into a hollow square when he was attacked on all sides and defeated. In this important battle the Romans lost 20,000 killed, and 10,000 prisoners. The darkness of the night favoured the escape of the reti, and Crassus, forced by the mutiny and turbulence of this fragment of his army, and the treachery of his guides, trusted himself to the general of the enemy, on pretence of proposing terms of accommodation, and he was put to death, B.C. 53. His head and right hand were cut off, and thrown to his troops, of whom some were exterminated, and others attempted to escape, who were most cruelly cut off by the Arabs. His head was afterwards sent to the Parthian monarch, who caused melted lead to be poured into it, and otherwise insulted his misfortunes.

Crassus, in his youth, was free from those vices which blazed the noble Roman youth; at the times; as he advanced in years, the love of money, not for its own sake, but with a view of enhancing his importance among his contemporaries, was the rock on which he split. Few among the ancients seem to systematically to have followed the plans of pecuniary profit: and he acquired a greater mass of wealth than any other Roman citizen; hence he obtained the name of Crassus the Rich. He was, however, at times exceedingly prodigal of his wealth: once he gave a sumptuous entertainment to the people at ten thousand tables, and he bestowed upon each gnefle corn enough to supply his wants, and those of his family for three months. He was likewise ready on almost every occasion to lend his money to his friends without interest, which shewed a mind superior to the principles of common avarice; and to the last, when destitute in business of ambition, he was fond of philosophy, and took great delight in the study of history. Plutarch. Florus. Univer. Hist. Cicero.

CRASSUS, Junius Paulus, a learned and ingenious physician, and native of Padua, where he appears to have been held in high estimation, published in 1581, in 4to. "De purgatione Medicamentis Quesitiones Medicis et naturales";—also, "Meditationes de Thennacca, et Mithridatis," 4to. 1576; and "Mortis repertum examen." But his principal merit consists in his being one of the earliest, and most judicious commentators on the works of Hippocrates, Galen, Palladius, and Aretaeus, and introducing those authors to more general notice:—contemporary with this writer flourished.

CRASSUS, Jeron, a disciple of Faustinus, but who, although he obtained the dignity of Doctor in Medicine, appears to have confined himself to the practice of surgery, in which branch he published several treatises, which continued to be in great estimation, long after his demise. The principal of these are, "De Calvranese curatioine, et de foltione continuo," 4to. 1560, Venice. "De tumouribus præter Naturam et de Ulceribus," 1562. "De Ceruelis, seu Basilliac, Morbo Novo, Medicis incognito, Utini," 1573, 8vo. and "De Cauterius, five de cautetianis oratione," (of which he made frequent use) 8vo. 1594. Haller. Bib. Med. Chirurg.

CRASTA, in Geography, a mountain of European Turkey, in the province of Albania; 4 miles north of Albafo.

CRASTANOVITZA, a town of Croatia, on the river Unna; 26 miles N.W. of Banjaluca, and 20 S.W. of Gradica.

CRASTONA, or CRISTONA, Gioaffeo, in Biography, a painter.
CRAG

In the seventh fort the stem is slender and shrubby, rising to the height of six or seven feet, with many irregular branches, armed with long slender thorns. The flowers are small and appear in June, and are succeeded by small roundish fruit, which ripens late in the autumn. It is also a native of North America.

It has a variety usually known under the title of Carolina hawthorn, in which the leaves are longer and whiter, and the flowers and fruit larger, but it is without thorns.

The eighth kind has a strong stem twenty feet in height, with numerous strong irregular branches. The flowers in small clusters at the side of the branches, similar in shape to those of the common hawthorn, but greatly larger as well as the fruit, which, when fully ripened, has a pleasant acid taste. It is a native of the southern parts of Europe.

Method of Culture.—All the different sorts are capable of being increased with facility, by fowing the seed in the open ground, either in the autumn or spring months, in drills, or broadcast, covering them to the depth of about an inch. The seeds, or haws, may be gathered from the hedges in many of the forts, and the others be procured from the nurseries-men, being employed, when fully ripened. The plants mostly appear in about twelve months. They should be kept perfectly clean from weeds, and be occasionally watered when the weather is hot and dry. When they have had one or two years growth in the seed-beds, they may, in most of the forts, be removed into nursery-rows, and let out at the distances of from eight inches to two feet, according to the forts, and from six inches to a foot in the rows; to remain till wanted for the purpose of forming hedges, or planting out in other places, having the top shoots and other parts cut and pruned, as there may be occasion. See HAWTHORN and WHITE-THORN.

The more beautiful and curious sorts are generally proper for the purpose of planting out, when they have attained three, four, or five feet growth.

For these kinds, in order to continue the varieties, recourse must be had to the practice of budding, grafting, or laying the young branches. The two first methods may be performed upon flocks of the common hawthorn, as any of the forts will take upon that stock of flock; or upon those of the other; but the former mode is the best. The operations should be performed at the usual season in the manner that is directed under their proper heads. See Budding and Grafting.

The young shoots should be laid down in the autumn, and when they have struck good roots, which, in most cases, happens in twelve or eighteen months, they should be taken off, and planted out in nursery rows, or other places, as above. See Layer and Layering.

The cuttings of the young shoots, planted out in the spring, in rather moist situations, will sometimes take root, and become good plants. See Cutting.

All the various sorts are hardy, and capable of succeeding in almost any soil or situation, where proper care is taken in their management.

The first kind is a highly useful plant for the purpose of forming hedges for the farmer, being extremely useful in enclosing lands where this sort of fence can be made use of. See Fence.

And all the other species and varieties may be employed as ornamental plants in the dumps and other parts of extensive shrubberies, and other pleasure-grounds and plantations. Many of the forts have likewise a very ornamental effect, when planted out singly on lawns, or other similar parts of pleasure-grounds, especially when in flower from their beautiful bloom. On this account they have also a fine effect.

CRAG

A painter, born in Pavia, in the year 1664. He studied some time under Bernardino Ciceri, and afterwards went to Rome for improvement. Upon his return to his own country, he employed himself many years in painting small pictures of figures with landscapes, esteemed for the spirit and lightness of their foliage. He died in Pavia after the year 1718. Lanzi, Orlando.

CRATUS, in Ancient Geography, a town, and also a mountain, of Sicily.

CRATUS, a town of Phrygia Major.

CRATEGELLA, in Entomology, a species of Tinea, in the class of Phleuma.

CRATEGUS, in Botany, Linn. See Mesphilaus and Pyrus.

CRATEGUS, in Gardening, comprehends plants of the hardy deciduous tree and shrub kinds; of which the sorts most commonly cultivated are the hawthorn or white-thorn, (C. oxyacanthus); the white beam, or white leaf tree (C. aridus); the wild service forb, or maple-leaved service (C. terminalis); the great American hawthorn (C. occidenta); the green-leaved Virginia hawthorn (C. viridula); the cockspur hawthorn (C. crucigall); the woolly-leaved hawthorn (C. tomentosum); and the parsley-leaved hawthorn, or azarine (C. acutus).

The first kind is well known to rise with an ascending round much-branched stem or trunk, having a smooth whitish coloured bark, and being left with sharp thorns, affording flowers of a white colour in May, which are succeeded in the autumn with bunches of dark red berries.

Of this sort there are different varieties, as with long oblong smooth bright scarlet fruit; with buds appearing of a fine bright yellow, and the fruit of a golden colour, being retained all the winter; with white berries and double blossoms, in large bunches: the maple leaf at first of a pure white, then turning to faint red; and the Glafonbury thorn, or early flowering thorn.

The second fort is a tree which rises to the height of thirty or forty feet, having a large trunk with numerous branches, with large bunches of flowers of a white colour at the ends of them. It is a native of most parts of Europe, flowering in May.

It has varieties with deeply fringed pinnatifid leaves, as the Swedish; and with leaves which are not white underneath.

That of the third sorts rise to the height of forty or fifty feet, having a large trunk, spreading at top into many branches so as to form a large head. The flowers are produced in large bunches at the ends of the branches, of a whitish colour, being succeeded by a roundish compressed fruit similar to the haw, but larger. It is a native of Denmark.

And it has a variety, with oblong ovate-leaves, or short foot-stalks.

The fourth kind reaches the height of about twenty feet, having a large upright trunk, branching at top to form a large head. The flowers are in large clusters, making a fine show in May, and being succeeded by large pear-shaped fruit of a bright scarlet colour, which becomes ripe in the beginning of autumn. It is a native of Virginia.

The fifth fort has the stem and branches thorny; the leaves being smooth and green on both sides. It has been supposed a variety of the above by Martyn.

In the sixth kind the stem is strong, being ten or twelve feet in height. The flowers are in roundish clusters of a bluish red colour, and the fruit of a globular form having a fine red colour. It is a native of North America, flowering in June.
CRA

effect in mixed plantations in various cases of ornamental planting.

CRATEEOGONUM, in Botany, Rumph. See Paris.

CRATEEOGONUM ambiguum, Rumph. See Oldenlan.

CRATERRIFORIS, a technical term in Botany, somewhat like Calabphorium, but not so much bullying out, rather approaching to more dillute forms.

CRATAIS, in Ancient Geography, a small river at the entrance of Italy, which ran between Colonna and Caesarea, and discharged itself towards the west into the strait of Sicily.

CRATCH, in Rural Economy, a name applied in some districts, to signify a cattle rack. It is also occasionally used to denote a cress. See Creel.

CRATCHES, in Farrowery, a dwelling on the pattern under the tetlock, and sometimes under the hoo.

CRATEE, or CRATER, in Ancient Geography, islands of the Adriatic gulf, between those of Tharus and Iph.

CRATER, Cup, in Ancient Geography, a constellation of the southern hemisphere; whose stars, in Ptolemy's catalogue, are seven; in Tycho's, eight; in Hevelin's, ten; in the Britannic catalogue, thirty-one. See Constellation.

CRATER, in Falconry, denotes a line on which hawks are fastened when reftained.

CRATER, in Ancient Geography, a name anciently given, from its form, to the gulf of Naples.

CRATERII PORTUS, a port of Asia Minor, in the Archidie; it is paced by Thucydides in the territory of the town of Phocis.

CRATERITES, in Natural History, the name of a genus mentioned by Piny, and said to be extremely hard, and of a middle colour between that of the chrysolite, and of the common yellow amber. This was plainly a species of Chrysolite.

CRATERO, in Biography, an ancient painter, from whose works were some comic figures in the edifice at Athens, which was called Pompeia, from the utensils used in their process, and terraces being there deposited. There was also a sculptor of the same name, who is said to have been employed at the palace of the Caesar upon Mount Palantine. Della Valle.

CRATERUS, a famous Macedonian general, who accompanied Alexander in his expedition to India, and enjoyed a great share of his esteem and confidence than any other commander in his service. Whilst Alexander was marching with his army toward Bactriana, some of his officers provided a conspiracy against his person; and Philotas, the son of Parmeno, was suspected of being a confederate in the treason. Craterus, who regarded him as a rival, availed himself of the opportunity which now offered itself, of extorting by torture a confession of his guilt, in consequence of which both Philotas and also his father, whom he had accused as one of his accomplices, were put to death. That Alexander duly appreciated the character of Craterus is plain from the reflection which he uttered on the death of his favourite Hephaestion: "Craterus," says he, "loves the king, but Hephaestion loves Alexander." Intimating that, whilst the latter had devoted himself in an affectionate manner to his person, the former was concerned for his reputation, and was sometimes lefs obsequious to his will than he was zealous for his glory and interest. Craterus was no less beloved by the Macedonians in general than by Alexander himself. Whilst he was entrusted by his sovereign with the command of the 10,000 veteran troops that were sent to Ma-

cedonia, on account of their age, wounds, or other infirmities, which rendered them incapable of service, he was appointed to the government of Macedonia, Thessaly, and Thrace, in the room of Antipater, who was recalled to Babylon. After the death of Alexander, the provinces of Macedonia, Epirus, and Greece, were assigned to Craterus and Antipater, who governed them jointly; and in this government Craterus approved himself a prudent and faithful associate; more especially in the operations of the war in which they were unavoidably engaged by the discovery of the designs which Perdiccas was forming. So highly was Craterus repented by the Macedonians, that they were desirous of having him for their leader after the death of Alexander; and such was their known attachment to him that Eumenes in the engagement in Cappadocia, which proved fatal to Craterus, took particular care not to oppose any Macedonian against him. Having acquitted himself with great valour on this occasion, and killed several of the enemies with his own hand, he was at last wounded by a Thracian in the back, and falling from his horse was trampled to death by the enemy's cavalry. Eumenes could not forbear shedding tears over a vanquished enemy, whom he had formerly esteemed as a friend; and he caused the latter to be paid him with all possible magnificence. His bones were conveyed to Macedonia for the disposal of his wife and children. The wife of Craterus was Phila, the daughter of Antipater, one of the most accomplished princesses of her age, no less distinguished by the amiable-ness of her disposition than by the beauty of her person. Rollin's Anc. Hist. vol. iv.

CRATES, the most distinguished philosopher of the Cynic sect after Diogenes, was, by birth a Theban, and flourished about the 113th Olympiad (B.C. 328.) and died after the year 5 B.C. He was honourably defended, and inherited a large estate; but, when he devoted himself to philosophy, that he might be free from the dominion of those passions which are fostered by wealth, he distributed his whole property among the poorer citizens. Leaving his native city, where he had been a disciple of Bryso, reckoned among the Cynic philosophers, he went to Athens, and became a zealous disciple of Diogenes; adopting all the singularities of his master. In natural temper, however, he was not, like Diogenes, morose and gloomy, but cheerful and facetious. This disposition attached to him many friends, and procured for him access to the houses of the most wealthy Athenians. Among the citizens at large he acquired a degree of confidence, which gained him admission into their domes circles; and he frequently became an arbiter of disputes and quarrels among relations. His influence in private families is said to have had a great effect in correcting the luxuries and vices which prevailed at that time in Athens. His wife, Hipparchia, who was rich and of a good family, and had many factors, preferred Crates to every other, and when her parents opposed her inclination, so determined was her passion, that she determined to put an end to her life. After marriage she adopted all the peculiarities of the Cynic philosophy. Lactantius, l. vi. § 85. &c. Suidas. Apol. Apol. p. 202.

CRATES, Lat. Hurdle. The ancients made use of machines formed of boards and hurdles for covering their men at work as they approached the walls of a town besieged.

CRATEVA,
CRATEVA.

CRATEVA, in Botany, (so called from Cratevus, a Greek physician, celebrated by Hippocrates for his knowledge of plants.) Plum. 2d. Linn. Gen. PI. 590. Schreb. S iz. 18. Willd. 939. Joff. 244. Vent. 3. 125. (Tapier; Encyc.)


Gen. Ch. Col. Perianth inferior, one-leaved, flat at the base, deeply four-lobed; segments egg-shaped, deciduous. Cor. Petals four, attached by the claws to the calyx. Stem. Filaments indeterminate in number, bristle-shaped, inserted into the pedicel of the peduncle; anthers erect, oblong. Perig. Germ on a long filiform column or pedicel; style none; stigma capitate. Petio. Berry pedicelled, fleshy, one-celled. Seed numerous, bedded in the pulp, roundish, emarginate.


Obs. In caparissus, which is very nearly allied to the present genus, the flowers are attached to the edge of the receptacle; but this, as Dr. Sims rightly observes, (Ic. Botanical Magazine, 1806,) is only a slight difference of the corolla from the calyx, and this is only an elongation of the centre of the receptacle. In the habit of the plants there is, however, this striking distinction, that the leaves are ternate in crateva, and simple in every species of caparissus, except the falcata and magna of Lour. (p. 27 and 41 of this dictionary) and a further investigation of the attachment of the filaments will perhaps show that these species ought to have been referred to Crateva.

Sp. 1. C. tapia. Linn. Sp. Pl. 2. Mart. 2. Poir. 1. Willd. 2. (Apioicorodon; Pius. Almag. 34. tab. 137. fig. 7. Malus americana; Comm. bot. 1. 129. tab. 67. Tapia. Plum. gen. amer. 21. tab. 21. Marg. Bratif. 89. Pfl. Braun. 63. tab. 66.) "Leafflets egg-shaped, acuminate; petals ovate-roundish; germ globular." A large tree, from thirty to thirty-six feet high, covered with a dark green bark, divided near the top into numerous branches, which form a thick and spreading head. Leaves alternate, petiolate, ternate, leaflets unequal, entire, smooth, and green on both sides. Flowers on long, alternate, fimbriate peduncles; flower-species spreading; ovary globular; segments of the calyx egg-shaped, scarlet, more, much shorter than the corolla; petals roundish, egg-shaped, obtuse, spreading, all inclined to the same side; claws as long as the lamina; filaments twice the length of the petals; anthers purple; germ globular. Fruit the size of an orange, with a hard brown rind. Seeds kidney-shaped. A native of Jamaica, Brazil. &c. 2. C. gynandra. Linn. Sp. Pl. 1. Mart. 1. Poir. 3. Willd. 2. Brown. Jam. 246. (Anona; Sison. Cat. 266. illt. 2. 170. Arbor americana; Pius. Phy. 147. fig. 6.) "Leafflets membranous, egg-shaped, quite cut; petals lacateolate." A tree, twelve feet high and more, with spreading branches. Leaves alternate, on long petioles, ternate; leaflets petioled, acute, nerved, veined, very smooth, thin, deep green. Flowers numerous, in panicled racemes; purple, simple, smooth, fleshy; segments of the calyx egg-shaped, acute, spreading; petals sometimes four, but more frequently only two, white; filaments from twenty to twenty-four, longer than the petals, deciduous, green, tinged with purple; anthers dark purple, pedicels of the germ the length of the calyx. Fruit brown, spherical, having, like that of the preceding species, a smell of garlic. A native of Jamaica. Obs. Linnaeus calls this species gynandra, from the misconception of the nature of the pedicel of the germ, which cannot be considered as sustaining the office of a style; the flaments, therefore, are by no means infected on any part of the pistil; but even if there were, the specific name would in this case be improper, all the other species having a similar character. The only difference is that some of them are inferted higher on the pedicel than the others. 3. C. abrotanum. Mart. 5. Poir. 2. Willd. 3. Vahl. Symb. 3. 61. "Leaflets and petals inversely egg-shaped; germ oblong." A tree with numerous smooth branches near the top. Leaves alternate, petiolar, ternate; leaflets unequal, mucronate, smooth, veined underneath. Flowers in a spreading, terminal panicle; peduncles alternate, simple, long; segments of the calyx oblong; petals with long claws; filaments three times the length of the petals. A native of Madagascar.

4. C. reclinata. Mart. 4. Poir. 4. Willd. 4. Lam. 1d. PI. 395. Forli. Prod. 203. plant. fusc. 45. Vahl. Symb. 3. 62. Curraria; Heed. Mel. 3. 49. tab. 42.) "Leaflets and petals lanceolate-lanceolate, narrowed at both ends." A middle-sized tree. Branches spreading, smooth, olive-colored, dotted with white. Leaves alternate, on long petioles, ternate; leaflets almost, equal, on short petioles, united with the blade, tipped with a petal; veins, an inch long and more. Flowers greenish-white, in a loose terminal panicle; peduncles long, cylindrical, simple, smooth; segments of the calyx small, egg-shaped; its base remaining on the pedicel of the fruit; petals narrow, much longer than the calyx; flaments twelve; filaments twice the length of the corolla or a little longer; pedicel of the germ longer than the flaments. Fruit globular, the size of a small plum. A native of the East Indies and the Society Islands. In the latter it is planted in their nurseries, and is supposed to be coveted for their balsam. The fruit is eaten by the natives. 5. C. fragrans. Bot. Mag. 396. (C. caparissoides; Bot. rep. 176.) "Stem twining; corolla regular; petals very long, undulated." Stems several, extending from 10 to 20 feet, with a multitude of branches. Leaves alternate, petiolate, alternate; leaflets almost fimbriate, egg-shaped, entire, shining. Flowers in terminal clusters, on long peduncles, yellowish-green, very fragrant; segments of the calyx large, ovate-acuminate, concave, equal; petals very narrow; claws long; lamina undulated and concolor petiole the same length as the calyx, same number, longer than the calyx; shorter than the petals, attached to the pedicel of the germ near its base, incurred; stigma annular; pedicel of the germ longer than the flaments. A native of the island of Borabugs, and of Sierra Leone in Africa; discovered by Dr. Afzelius, and raised in England from seeds sent by him to T. Evans, esq. of Stepney; but it has not yet ripened its fruit in this country. It is propagated easily by cuttings, but to thrive well requires more room for its roots than a pot. 6. C. marmelos. Linn. Sp. Pl. 3. Mart. 3. Poir. 5. Willd. 5. (Cercibusia; Pluk. Alm. 125. tab. 170. fig. 5. Cydonia exotica; Bauh. Pin. 425. Bicanus; Rumpl. Amb. 1. 197. tab. 31. Cocalum; Hedd. Mel. 3. 37. tab. 37. Burm. Flora Ind. 109.) "Thorny; leaves serrated." A tall tree, with a large trunk; branches numerous, thick, cylindrical, smooth, leathery, armed between the leaves with diverging pairs of long acute spines. Leaves alternate, petiolate, ternate; leaflets oblong, acute, smooth on both sides; compound. Flowers green on the outside, whitish within, sweet-scented, six or seven together on a common branched peduncle, forming small terminal and lateral racemes. Fruit the size of an orange; containing, in a hard rind or shell, a thick, viscid, yellowish pulp, which has an agreeable flavour, and is frequently ferried up by the East Indians in their deers, mixed with orange and sugar.
Obs. Linnaeus placed the last species under this genus, though he was aware that it does not correspond with his generic character, observing that it has a five-cleft calyx, sixty stamens, and no petals; but with respect to the last particular, he has since been found to have fallen into an error. Jussieu afterwards remarked, that it seems to have more affinity to his natural order mariantha than to his caparides, to which the other species of crateva properly belong. The well-known Dr. Correa has confinned the suggestion of Jussieu, and in an excellent paper, inserted in the fifth volume of the Linnaean Transactions, p. 212, has established for it a new genus, which he has called xycle, the name of one of the Herpides. As this new genus has, through some oversight, been omitted by us in its proper place, we shall here give its natural character. *C. petrana* one-leaved, small, five-leaved, falling off before the maturity of the fruit. Cor. Petals five, many times larger than the calyx, ovate-acum., spreading. Stam. Filaments very numerous, short, awl-shaped, inserted into the outer side of an elevated receptacle or hypogynous disk; anthers oblong, erect. *Pf. Germ superior, egg-shaped; style short, thick; stigma oval; (according to König, marked with many oblique furrows.) Fric. Berry globular-top-shaped, with a smooth, shitted rind, which finally becomes woody; cells in Correa's specimen ten, surrounded with a pouncy flesh, which, after the fruit ripens, soon disappears. Seeds numerous in each cell, egg-shaped, compressed, hairy, attached in a single series to a flat, straight, umbilical cord. There are in the herbarium of Sir Joseph Banks two seemingly distinct species of this genus, both arboreous, and both natives of the East Indies. The crateva balangas of König is considered by Dr. Correa as another distinct genus, which he has described under the name of fenonia. See Fenonia.

Crateva falis singularibus; Brown. See Capparis ferruginea.

Crateva, in Gardening, comprehends plants of the exotic tree kind for the; of which the fruits mostly cultivated are the smooth crateva or garlic pear (C. tapia), and the prickly crateva (C. marmelos).

Method of Culture.—These two plants are capable of being increased by fowing the seeds, which have been procured from the places where they grow naturally, as soon as they arrive, in pots of light rich earth, and plunging them immediately in the dark bed of the roof. The plants, after they have obtained the growth of about three inches, should be removed and placed out in separate pots, a very little water being given at the time, replanting them immediately in the hot bed.

The plants require afterwards to be kept constantly in this situation, and to have the care and management of other tender woody plants of the exotic kind, which have familiar habits of growth.

Crathes, in Ancient Geography, Crati, a small river of Italy, in Brutium. It commenced S.E of Conventus, pursued a northern course to Caprae, whence it flowed by the north-ea, and discharged itself into the gulf of Tarentum, near Sybaris. Strabo says, that the waters of this river gave a white colour to the hair of those who drank them; and they are said to have been useful in medicine. Herodotus and Paulnias inform us, that the river derived its name from Crathis of Achaia. Near its mouth was a temple of Minerva, surnamed Gratian. See Crati.

Allo, a river of Achaia, E. of Bura, which had its source in a mountain of the name in Arcadia, near Cyllene, and ran from the S.W. to the N.E. into the gulf of Corinth. It received, in its course, the Alyfian and the Styx.

Allo, a river of Aisa, in Cilicia.
dolph, which he notices in an epigram he composed a short time before his death:

“Caesaribus placuisset tribus, non ultima laus eft,
Me pater lac orناس, fuis atque nepos.”

His works were numerous: the titles of the principal of them were, “De Morbo Gallico Commentarius,” Franc. 1594; “De verum præcependi et curandî fæbrem contagiotam peffilentem Ratione,” 1594; “Methodus Therapeutica ex Galeni et Montani Sententia.” There were also published several volumes in Svo. of Epitaphs and Consultations. He died Nov. 9th, 1585: Haller Bib. Med. Eloy Diet., Hill.

CRATOWNESS, a cape on the E. coast of Scotland, in the county of Kincardine; 3 miles S. of Stonehaven.

CRAVALLIÆ or CRAVALIDE, in Ancient Geography, a small country of Greece, in the territory of Phocaea, near the town of Cyrrha. Suidas.

CRAY, in Geography, a small town of France, in the department of the Yonne, 12 miles S. of Auxerre, near the junction of the rivers Cure and Yonne, famous for a good port of Burgundy wine.

CRAY, in Ornithology, a name by which Bellonius and some others have called the barnacle, a small species of wild goose, common in winter on the coasts of Lancashire, the Anas Bernula of Gmelin, and the Brent-goose of other writers. See Barnacle Goose.

CRAYVES. See Croats.

CRAY, d’ARLES, La, in Geography, is a considerable extent of very fliny ground in the department of the Doubs-du-Rhône, in France, in the commune of Arles, which has lately been fertilized by a canal from the river Durance, called the canal of Craponne. The numerous flocks of sheep which are kept here leave this plain in summer, to feed on the high mountains of the neighbouring departments, for which reason they are called bêtes à laine transhumantes, wandering sheep.

CRAY, or CRAVEN, in British Antiquity, a term of reproach used in trials by battle.

The law was, that the victory should be proclaimed, and the vanquished acknowledged his fault, in the presence of the people, or pronounce the word crayen in the name of the vanquished, or cowardice, &c. and, prefently, judgment to be given; and the recr ênt amittere legem terre, i.e. become infamous.

Coke observes, that if the appellant join battle, and cry crayen, he is to lose liberam legem. If the appalled cry crayen, he is to be hanged. See Wager of Battle, and Combat.

CRAY, in Geography, a county of America, in the state of N. Carolina, and district of Newbern, bounded N. by Pitt and S. by Carteret and Onslow counties. Its chief town is Newbern: it contains 10,469 inhabitants, of whom 3678 are slaves.

CRAVETTA, Amon, in Biography, an eminent lawyer in Piedmont, was born in 1504. When young he was of so delicate a constitution, that his parents had little hopes of seeing him; and in proportion to their great anxiety, they prevented him from pursuing his studies. Notwithstanding these disadvantages, he made to much proficiency as to be highly esteemed as a professor at the age of twenty; and in three years after, having received the title of doctor, he was sent as jurist to Curso, and thence he practised as advocate at Turin. Upon the breaking out of a war in Piedmont, he was imprisoned two years, and not allowed the use of his books. In 1558 he was successively professor of law at Grenoble and Lyons: at the latter city he printed his "Consultations." He was also public teacher of his science at Avignon and Ferrara, and was invited to Pavia, and at length returned to Turin, where he obtained a stipend of 1200 crowns. In this city he died in 1560, highly respected for his talents and indefatigable application. Besides his "Consultations," he was author of a work on the subject of jurisprudence, entitled, "Tractatus de Antiquitatibus Temporum," printed after his death in 1575.

CRAWGLIÆ, in Ancient Geography, small islands on the coast of the Peloponnesus, near Cape Spirza, according to Pliny.

CRAULA, or CRAWLAD, in Geography, a small town of Germany, in the duchy of Saxe-Gotha, containing 117 houses, and 354 inhabitants, who are chiefly hop-planters.

CRAW, Crop, or Ingulices, a part in granivorous fowls which serves for the immediate reception of the food; where it remains some time for maceration, before it be transmitted to the stomach. These ingulices is furnished with g'ands, which, the patrons of fermentation maintain, convey a menstruum thither, that impregnates the aliment, and ferves instead of malacita-tion.

CRAW, or Gray Fish, in Ichthyology, a species of the Cancer, the Cancer australis of Linnaeus. (See Cancer fluviatilis, under the genus Aculus.) The flesh is good and nutritious, and has been recommended to persons under atropies. There are various methods of preparing these animals: they may be either boiled or fried, and then taken out of their shells and made up in variety of dishes; but no parts of them are eatable except their claws and tail. Preparations and broths of cray-fish have been celebrated not only for a palatable aliment, but also for answering some medicinal intentions, as being of a moistering quality, and correcting acrimony. The broth is prepared of four or five cray-fish, which, having their heads cut off, and their intestines extracted, are to be bruised and boiled in the broth of fish or poultry, until they become sufficiently red; after which the liquor is to be strained off and seasoned, as the café may require. This broth may be rendered still more medicinal by the addition of herbs, fanning, or other substances; according to the intention of the physician. The flesh is counted best in the summer months.

The delicate flavour of these fish depends in a great measure on their food. When they have well-tailed food, their flesh preserves the relish of it; but when they feed on other things, they are often rendered of no value, by the flavour communicated to their flesh by them. There are great quantities of these fish in the river Obra, on the borders of Silicia; but the people find them scarcely eatable, because of a bitter aromatic flavour, very disagreeable in food. It has been since observed, that the calamis aromatis works in vail abundance on the banks of that river, and that these creatures feed very greedily upon its roots. These have a very remarkalbe bitterness mixed with their aromatic flavour, while fresh, which goes off very much in their drying; and on comparing the tale of these roots with that of the cray-fish, there remains no doubt of the one being owing to the other. Act. Lepis. 1690.

They abound in the river Don in Muscovy, where they are laid in heaps to putrefy; after which the stones, called crab's eyes, are picked out.

These animals are very greedy of fsh, and flock in great numbers about caraffes thrown into the water where they are, and never leave it while any remains. They also feed on dead frogs when they come in their way. James.

In Switzerland, there are some cray-fish which are red, while
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while they are alive, and others bluish. Some kinds of them also will never become red, even by boiling, but continue blackish.

The cray-fish discharges itself of its belly, and as M. Geoffroy thinks, of its intestines too. These, as they putrefy and diffuse, serve for food to the animal; during the time of the re-formation, the old belly seems to be the first food the new one digests. It is only at this time, that the bones are found called Cra's eyes; they begin to be formed when the old belly is destroyed, and are afterwards wrapped up in the new one, where they decrease by degrees till they entirely disappear.

CRAWDADO, N.W., in Geography, a town of the island of Jamaica, about 15 miles N. of Kingston.

CRAWFORD, Old, a town of Jamaica, now deserted, about 13 miles N. of Kingston.

CRAWFORD, a town of America, in the state of Virginia; 5 miles N. of Well Point.

CRAWINELK, in ancient documents Grawinella, is a small town of Germany, in the duchy of Sax-Gotha, near the forest of Thuringen. It has 200 houses, and 934 inhabitants, who derive their chief subsistence from burning charcoal, making lamp-black, and acting as waggoners.

CRAWLEY, or HUSBORN-CRAWLEY, a vicarage in Bedfordshire, in the hundred of Marfield. The southern parts of this parish are situated on the Woburn-fand Irratum, and the remainder upon the Church clay Irratum, which here crops from beneath the land. The sand-bank on which the church stands has a layer of fuller's earth in it, beneath which some very large lenticulars of petrified wood were a few years ago dug out, that are in the possession of Richard Howey, esq. of Aspley, an adjoining village. The clay hill north of the church is occasioned by a considerable fault which crosses the parish in a north-east direction, with an extreme depression of the land Irratum to the south of it. The top of the clay above-mentioned, abounds with large and thick gryphites, or oyster-like shells, perforated by some other hills, at the time the fish were alive in these gryphites; very beautiful small carna-ammoni in golden pyrites, are also found in this clay at the brick-kilns, and a flabby subflata, here called Clunch, fee that article. In 1726, this parish was included under an act of parliament, and a large heath was in consequence taken into the duke of Bedford's park, and cultivated, except the steep and most barren parts, which were planted. A very extensive peat bog, between the village, or Town-Street, and the church, which had long exerted its deleterious influence on the health of the inhabitants; as a comparison of the proportions of bits to burial in this parish and many adjoining villages proved; was effectually drained in consequence of the inclosure, under the directions of Mr. Farcy, the agent of the late duke of Bedford, who used to be the passage for this park, and cultivated, were at the same time made for an extensive irrigation in this vale. The situation of Crawley creek was ascertained in the government trigonometrical survey, by an observation from Bowbrick hill flaton, distant 15,006 feet, and bearing 03° 34' 61" south-west from the parallel to the meridian of Greenwich, and another from Trouser hill flaton, distant 8,867, whence was deduced its latitude 52° 57" 38', and its longitude 0° 36' 19' 8", or 2° 25' 3" west of Greenwich. A new barn and premises, erected on a hill in the new park, were also observed, and the centre of the front or south side was found to bear 53° 53' 24" north-west of the parallel above mentioned, and to be distant 6023 feet from the centre of the creek. A new and excellent turnpike road was, in 1796, made through this village, at the expense of the late duke of Bedford, in lieu of one which formerly went through his park; the cottages were, in general, re-

paired, and several new ones built; gardens were allotted to each of them, and as great an alteration made for the better, in the appearance and comforts of this village, as perhaps has any where else been witnessed.

CRAX, in Ornithology, a genus of the gallinaceous order. The bill is strong and thick, with the base of both mandibles covered with a cere; nostrils small, and placed in the middle of the cere; head crested with revolute feathers; tail large, straight, and expansive.—Curassow.

Species.

ALECTOR (male.) Cere yellow; body black; belly white; (female) red; head black; neck white, tipt with black.

Curassow.

Linnnaeus describes the male and female as two distinct species, the first under the name of Alceor, the other rubra. The male is about the size of a small turkey; the bill an inch and three quarters long, dusky, and covered from the middle with a skin which falls backwards round the eyes. The general plumage is deep black. The top of the head is elegantly crested with upright twisted feathers of a black colour, the longest of which are nearly three inches long, the others shorter; the lower part of the belly, vent, and thighs white; its tail is eleven inches long, and consists of fourteen feathers, which are little rounded in shape, and of a black colour. The legs strong and dusky brown. This is the Curas guianensis of Drifon, Minipornas of Ray, Haco de la Guiana of Buffon, Indian bird of Priftel, Guiana peacock pheasant of Bancroft, and Croased Curassow of Brown.

The female is about the size of the male; the bill afe-coloured; friges red, and the head crested as in the other sex, the feathers white with black tips. The head, and hind part of the neck afe-coloured; fore part of the neck, and ruff of the plumage red brown; tail plain and dusky black; legs brown. This is called Hace de Peran by Buffon, and is the Red Peruvian hen of Albin.

The croased Curassow is a native of the mountainous parts of Mexico and Peru, where, in their natural state, they feed on fruits, and roost in trees. They are remarkably docile, and have been cultivated, with much success, in the warmer parts of America, and the West Indian islands. At Guiana, where they constitute a principal article of food among the planters, these birds are known by the name of Powefe, and they are also common in the (late) Dutch settlements of Berbice, Elffiquo, and Demara. At the Brasil it is known by the name of Curassio. The flesh is white, and well-flavoured. Some endeavours have been made to naturalize these birds in England, but the climate is neither sufficiently warm, nor dry enough for this purpose, and they are hence rather more likely to remain an ornament to our menageries, than become of permanent utility in our yards of poultry.

There are several interlacing and beautiful varieties of this species, among which may be mentioned the Cra Mitu of Linnaeus, which latter observation has proved to be only a variety of the Alceor: it is the size of the others, and has the bill crooked, about an inch and a half in length, the upper chop four times as large as the lower, and of a flesh colour, with the tip whitish. Behind the car is a white naked spot; and the head is crested with long feathers which may be elevated at the pleasure of the bird, into a conicous crest. The feathers on the head, neck, and breast are velvety; the ruff of the plumage black, except the belly and under the tail, which are of a brown colour, almost like that of a partridge. Another variety Haco, Fajon de la Guiana of Buffon, differs in having the tip of the tail white; and a fourth kind has the crest white tipped with black; neck barred with black and white; thighs brown; and vent white. Sometimes also, the tail is barred alternately

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black and white. The above are varieties of the male bird; the females vary also very considerably. Some of the latter have the neck annulated with black and white; belly white; and tail brown; and others have the body barred with redbrown, and yellowish or cream colour. But one of the most elegant varieties is of a red brown, pale brown, and black at the tip; neck ringed, black and white; tail brown, crossed with nine yellowish bands, bounded on both sides with black; legs yellowish, with dusky claws.

GLOBIICER A.—Yellow; glibosity of the nostrils globular; body blackish-blue; lower part of the belly white.—Cray Curafoon, Brissol, Gallina Indica, Aldrovanus, Curafew bird, Edwards, Globo Curafew, Latifam.

This is the size of the last, and has the bill yellow with the tip cinerose, and at the top over the nostrils a round glibosity somewhat resembling a cherry in its form, very hard, and of a fine yellow colour. The irides are red, and the space round the eyes white. The feathers on the head are long, and form a crest pointing forwards, the feathers are black with white tips, and rather incised. The general colour of the plumage is black, except the lower part of the belly, vent, and space across the thighs, all which are white; legs pale ferrugineous. The female has the head and hind part of the neck black; the crested black, with a white band. Some of the neck feathers have the tip white; the front part of the neck, and breast, back and wings are dull brown; the upper part of the belly white, with some of the feathers tipped with black; lower part of the belly, vent, and thighs pale yellow-brown; the tail crossed with four broad bands of white; the knob on the bill is yellow as in the male, and the bill is cinerose, but the legs are ash-coloured. This is a native of Guiana.


Size of the preceding, but of a more slender form. The bill is red, with a glibosity at the base as large as a small pear, and not unlike it in form, very hard, and of a fine blue colour; the base of the mandible is also blue. The plumage is glossy blue-black, with a tinge of purple; lower part of the belly, under tail coverts, and tip of the tail, white; legs pale red; claws black. The female is distinguished by having those parts brown, which in the male are black. The species inhabits Mexico.

GALEATA. Crown horry; body black; vent white. Le Hocho & tete calafies, Brissol. Galated Curaffou, Lath.

This is nearly as large as a turkey. The general colour black, except the vent, and under tail coverts, which are white; on the crown of the head is a horry sub stance about two inches in height, broad at bottom, and ending above in a blunt point, reminding along a kind of cone. The bill and legs are red. Inhabits Curaffou.

VOCIFERANS. Brown; bill and breast blue; red yellow—Peneleus Vociferans. Gmel. La Chancour, Buffon, Chachalacamen, Fernandez, Crying Curaffou, Lath.

Described from an account given of it by Fernandez. It is the size of the common fowl; and is remarkably chamois and noisy, whence the Mexican name Chachalacamen, or crying bird. This kind inhabits mountainous situations in South America.

CRAY, in Geography, a river of England, which runs into the Derent near Darforl, in Kent.

CRAYF, a river of Wales, which runs into the Usk in Glamorganhire.

CRAYEF, a kind of small sea-fowl or ship. It is mentioned in the rat. 14 Car. II. c. 27. and in old records, Et tyrannus ceraeram & bataerorum cum sorci& alilib nocventibus, &c. Paul. 6. Ric. III. Parc. 2. M. 15.

CRAYEF, OF CA SPAR, in Biography, a painter of some eminence, born in 1552. He was a native of Antwerp, and was the scholar of Raphael, the son of Michael Coxcce of Bruffels. He soon, however, surpassed his master, and, aided by the study of the best pictures, to which he could have access, acquired a skill, according to the opinion of his contemporaries, only inferior to that of Rubens and Van Dyke.

Caspaf was held in such esteem at Bruffels, that the government proposed to confer upon him several offices and a pension, naming thereby to prevent his quitting that city; but he declined the honours that were offered him, and afterwards refided at Antwerp, where he was visited by Rubens, who beftowed the highest encomiums on a picture (a large composition) which Caspar was then painting, of the Centurion alighting from his Horse to prostrate himself at the Feet of our Saviour. So following Rubens's example, however, does not seem to entertain so high an opinion of this artist's merit, as will appear from the following extract from his journey into Holland.

"Here is an immense picture of Gaspar de Crayef, mentioned not on account of its excellence in my own opinion, but from its being in such high estimation in this country, and it is certainly one of his largest works. Though it cannot be said to be defective in drawing or colouring, yet it is far from being a striking picture. There is no union between his figures and the ground; the outline is everywhere seen, which takes away the softnesses and richnesses of effect; the men are inipid characters, and the women want beauty. The composition is something on the plan of the great picture of Rubens in the St. Augufina at Antwerp: that is, the subject is of the same kind, but there is a great difference indeed in their degree of merit. The dead and cold effect of this picture, as well as many others of modern masters in this gallery, fits off the taste of Rubens to great advantage. It would be a profitable study for a young painter to look from those pictures to Rubens, and compare them again and again, till he has investigated and fixed in his mind the caufe and principles of such brilliant effects in one instance, and of failure (when there is failure) in the other."

Caspaf, after having devoted a long life to retirement and the constant study of his profession, died in 1669. The following are amongst the principal pictures which he painted in the churches of Bruffels: and of Gand: A Reurrection, an Altar-piece in the church des Freres de la Caritot in the latter town; another Altar-piece in the church of the Augufinas, representing the crowning of several saints; and in the church of Notre Dame, behind the altar, an Altar-piece. Deencamps.

CRAYFORD, in Geography, a rectory in Kent, in the lath of Sutton. The Derent and Crayef river is navigable for barges, and the tide runs up to the calico-printing mills within a mile of this town. The church stands high on the top of the sand, stratum covering the chalk, in a lifted or very dissected part, a considerable thickness of gravel covers the soil on the top of this sand, to the westward of the church, extending towards the windmill on the common. A station was chosen in 1799 upon the top of this steeple for the small instrument in the trigonometrical survey, its situation being determined by an observation from Severndroog tower, distant 26,479 feet, and bearing Ss° 50' 1' N.W. from the parallel to the meridian of Greenwich, and another from Well hill station, distant 37,940 feet, and bearing 9° 14 43' S.W. from the said parallel; whence
whence it is deduced its latitude 51° 27' 17".8 N. and its longitude 0° 10" 32'.2 E. of Greenwich. This station was used with Asl fumble for determining the place of Dartford Brent mill, and Northfleet church, with Charlton farm station for Darent fumble; with Dartford Brent mill for Stone fumble; with Sevenoaks tower for B. aley fipere; and with Well Hill station for Asl fumble, Charlton farm.

In the village of Crayford, formerly called "Greenford," Hengist, two years after the death of his brother Floris, A.D. 455, gained a great victory over the Britons under Vortimer, which gave him possession of all Kent, and emboldened him to assume the name of King, having before this event contented himself with the more humble title of "heretogen" or general. Thus was the first Saxon kingdom, that of Kent, founded, about eight years after the arrival of Hengist and his followers in this island. The river Cray, that passes through this village, serves to work a mill for flattening and rolling iron, and another for a cotton manufacture. Crayford is 2 miles W. of Dartford, and 13 E.S.E. of London.

CRAYON, a general name for all coloured stones, earths, or other minerals and substances, used in delineating, or painting in pastel ; whether they have been beaten and reduced to a paste, or are used in their primitive state, after fawing or cutting them into long narrow slips.

In this last manner are red crayons made, of bloodstone, or red chalk ; black ones, of charcoal and black lead. The best charcoal is that of willow, on account of its softness.

Crayons of all other colours are compositions of earths reduced to paste.

Good crayons for the purpose of drawing and painting are not easily procured. Those formed from red chalk, which are in common use, are almost always hard, gritty, and deficient in an uniform consistence. The only good crayons used in France are manufactured exclusively at Paris, where they are sold at a very high price : the best having been long known there by the name of the pale crayons of Defmar
ek, who seems to have been the inventor. Induc'd by these considerations, M. C. F. Lomé made a variety of experiments with a view of ascertaining the best combinations of various substances adapted to the fabrication of crayons ; and the results that were satisfactory are here followed. These crayons are composed of the following kinds of ochre or redde, which is an oxide of iron mixed with earth of an argillaceous nature, and called hematom or bog~a. This must be incorporated with some agglutinating substance, such as gum, glute, or rosin, to which is sometimes added soap for softening the composition. Instead of redde, the other red oxides of iron may be used, such as color-
thar of vitriol, &c.; but these should be chosen soft to the touch and of a lively colour ; whereas those made for sale are often mixed with too much clay, which gives them a dull yellowish cast that ought to be avoided. The best redde, in lumps, should be fresh, and ground with pure water on a marble slab, as is done in the preparation of colours for painting, moistening it with a little water, just sufficient to make the grinding stone slide. For preparing a large quantity, the redde must be pounded and sifted through a fine sieve, then diluted with a large quantity of water in a trough, where, after being well stirred, it should be left for 2 or 3 minutes to settle, that the coarser particles may subside to the bottom. The water, strongly impregnated with the finer particles, must then be poured off, and allowed to settle for 24 hours : when the clear water has been poured off, a fine sediment will be obtained, which must be again pounded and washed. The process is repeated till the whole is reduced to the utmost fineness. The gum, glue, or soap, necessary for giving to the crayons a due degree of solidity, must be separately dissolved. The solutions must then be carefully mixed with the pounded ocher or redde, and the water evaporated by exposure to the sun or the heat of a gentle fire, taking care frequently to turn the pails till it has acquired a consistence somewhat harder than butter; the crayons are then to be formed in the moulds, which may be done two ways: first, by spreading out the paste on a board, in which are cut grooves rather broader at the top and round at bottom, and of any length, size, and depth, according to the proposed bulk of the crayons; or otherwise, which is the better method, by forcing the paste through a tube or funnel of an orifice equal to the size of the crayon. The paste thus formed may be left to dry in a cool place under the shade, in order to prevent cracking, which a more rapid evaporation would produce. When the rods or crayons are dry, they are to be cut into proper lengths; and the edges should be taken off; after which they must receive the first cutting, in order to give them a blunt point. The last operation is that of superposing them, for the purpose of taking off the hard outward coat formed on the surface in drying, and which would prevent their making any marks. It may be necessary to rub a small portion of oil into the grooves of the wood, that the paste may not adhere too closely to the moulds. Gum arabic and linseed oil are the two best substances for mixing with the powder. The gum may be boiled and dissolved in cold water; but the linseed oil must be cut in small pieces, put into hot water, and dissolved in Dalmatian wine. These solutions should be well diluted with water, that they may be made to pass through a hair sieve in order to remove any foreign particles. As it is difficult to incorporate the paste with the linseed, they must both be heated and mixed over a fire with a heat equal to that of boiling water. The paste should be well mixed before it is moulded. The bell mode is to beat it with a pestle or mallet, and so pound it again for some time before it is put into the moulds. No soap may be employed but for those crayons in which gum is used. M. Lomé observes, that, as the crayons for which soap has been used are of a browner cast, it would appear that this combination ablates the oxygen from a part of the red oxide of iron, and gives it a brown tint by causing it to approach the state of metallic oxides. All the pastes prepared with an oxide of iron, even when pure water alone is used, become brown on the exterior surface as they dry; and still more feebly when they are exposed to the action of the sun, which seems to arise from the light's abrating a portion of the oxygen from the oxide of iron.

The crayons, says our author, composed in this manner, have every good property that can be desired; they do not cost one-quarter of the common price; but it ought to be considered, that their composition requires great nicety in regard to the quantity of the materials, because the least variation occasions considerable difference in the quality of the paste. The bell means to prevent waste, during the operation, will be to fix by experiments the quantity of water and of ingredients which the pounded redde and the solutions form before the mixtures are made. The following statements will serve this purpose. 1. Dry redde, or red oxide of iron, 1 oz.; gum arabic, 15 grs. Crayons thus made are very friable, but they may be used for large designs. 2. Redde, 1 oz.; gum 24 grs. will yield strong crayons, rather friable, but excellent for large drawings. 3. Redde, 1 oz.; gum 15 grs. or rather 15 1/2 grs. will give smooth and solid crayons, the best for common use. 4. Redde, 1 oz.; gum 24 grs. will produce soft firm crayons, fit for drawings which require delicacy and precision. 5. Redde, 1 oz.; gum 32 grs., will yield very firm crayons,
creas, fit for small drawings which are to be highly finished. 6. Reddie 10oz: gum 33 gr. will give very hard crayons, that cannot be used without some force. This is the greatest quantity of gum that can be employed in their composition; with more they would be useless. 7. Reddie 1 oz: gum 22 gr: white hard soap 30 grains. Crayons thus formed have a somewhat browner cast than the former. Their confidence is good, and they may be easily cut. All crayons with soap in their composition have this fault, that the brokes made by them have a thinning appearance if the touches are repeated somewhat too strongly. These crayons perfectly resemble those of Daumaresq.


CRAZE milk, or Crazing milk, a mill in all respects like a grind mill to grind corn, and is so called by the tummiers, who use it to grind their tin, which is yet too great, after tumbling, and then it is trampled only.

CRAZEY, in Agriculture, a name not uncommonly applied in different districts to a weed in pasture lands, the (Rumiculus repens) or creeping crowfoot.

In the vale district of the county of Gloucester, it is, according to Mr. Marshall, a plant which is greatly esteemed as producing a valuable food of pasturage or herbage, while the common and bulbous species of it are considered as likely pernicious, particularly when made into hay. This distinction, he suggests, as doing the vole farmers of this district great credit, because it has been found by experience that these two latter species are extremely acid and noxious, having the tendency to produce an effect similar to that of caustic substances on the mouths of the animals which feed upon them; while the first species is perfectly mild and agreeable in its nature, so as to be highly beneficial to such cattle as feed upon it. This circumstance may lead the indiscriminate and attentive farmer to extirpate the noxious species of this fort from his pastures, while he encourages the growth of the mild in them. See Crowfoot.

CREALS, are a sort of jetties or weare-hedges, sometimes erected on the shores of rivers or the sea, for checking the force of the current or tide, in particular places, and containing a deep pit of soil or mud, in place of a constant wear and encroachment of the water upon the land. Smear's Reports, 1. p. 4.

CREAM, in Rural Economy, the name of the fat, oily, or unctuous fluid, which rises on the surface of milk on standing, being specifically lighter than the other parts, and from which the well known article butter is made. See Butter and Dairying.

It is supposed by Dr. Anderson, that the separation of this oily fluid from milk takes place in consequence of an acid being formed, or that it is greatly promoted by it. Cream contains all the butter, some of the cheese, and also a portion of the other principles of the milk. Violent agitation converts the cream into thick froth; in which state it is called “skilped cream.” The word is derived from creare, which signifies the fame; though in the lower Latin we find creare baite.

A variety of elegant preparations, for the purpose of diet, are made from cream in other countries, especially in Germany; and in the northern part of this island a prepara- tion is formed from it which affords an agreeable and nutritive article of food, and which is known under the title of Cremefrith Cream, probably from the village of that name, where it is said to have been first made. It is usually sold through the streets of Edinburgh under the denomination of jact cream.

The process by which it is prepared is this: a portion of skimmed milk, which has only acquired a moderately acid taste, is put into an upright wooden vessel, mostly the common upright churn, which being provided with a spigot and foflet at the bottom, is placed in a tub of a sufficient fize to hold it, when hot water is poured into the tub till it rises nearly to the height of the milk in the vessel which contains it. The whole is then covered with a cloth, and is usually kept a quarter of an hour, and it is then taken off by means of the spigot. This fluid is then termed aggy. The cream is now fit for being made use of, and is scarcely capable of being distinguished from real cream. Its goodness, however, in a great measure depends upon the skill of the person who is employed in making it, as it is much affected by different circumstances of the process, as the degree of heat to which it is subjected, and the acidity of the milk. It is eaten in mixture with sugar as a great delicacy. The "clouted cream" of the west of England is well known.

Cream of lime, is that matter which separates from lime-water by crystallization, during the evaporation of the water; forming on the surface a semi-transparent pellicle, which gradually thickens, till at length it hardens in the form of scales. This is a calcareous earth, which having once lost its gas, fixed air, or carbonic acid, by calcination is recombined with it after being diffused in water, and exposed again to the air, and hereby becomes mild, crystallizable, insoluble in water, and recovers its original state before calcination. See Lime.

Cream-of-rofe, a vegetable perfume, which M. Chaptal prepares by mixing equal parts of rofe water, spirit of wine, and sugar, and syrup of sugar; and colouring the mixture with the infusion of cochineal.

Cream-flies, in Rural Economy, the name usually applied to a sort of wooden knife, twelve or fourteen inches in length, which is employed in removing the cream from the vessels in which it is contained.

Cream of tartar, eremor tartari, is that part of the concrete acid of tartar which crystallizes first, and forms a pellicle on the surface of the water in which tartar has been boiled. This has been a general name comprehending this same pellicle and the crystals of tartar a tartar of potash. The manufacture of this purified tartar has been chiefly carried on at Montpellier and at Venice. The following is the process at the former place, as it is stated by Chaptal. The tartar is boiled in water, and suffered to crystallize by cooling. The crystals are then boiled in another vessel, with the addition of 5 or 6 pounds of the white argillaceous earth of Murvel to each quintal of the salt. After this boiling with the earth, a very white salt is obtained by evaporation, which is known by the name of cream of tartar, or acidulous tartar of potash. M. Defmures informs us, "Jour. de Physe," 1771, that the process used at Venice consists, 1st. in drying the tartar in iron boilers: 2. pounding it and dissolving it in hot water, which by cooling affords pure crystals: 3. redissolving these crystals in water, and evaporating the solution with white of eggs and ales. The process at Montpellier differs from Chaptal (El Chem. vol. iv. p. 269), is preferable to that at Venice; as the addition of the ales introduces a foreign salt, which alters the purity of the product. The acidulous tartar of potash crystallizes in tetrahedral prisms cut off flatwise. The salt is used by the dyers as a mordant; but its greatest consumption
fumption is in the north, where it is used at table as a savor.

CREAANCE, in Geography, a small town of France, in the department of La Manche, 9 miles N.W. of Coutances. - Also, formerly a marquisate in the department of La Molle, 7 miles E. of Metz.

CREANGIE, or Krichingen, a town of Germany, in the circle of the Upper Rhine, and capital of a county; 38 miles W.S.W. of Duss Point.

CREASE-TYLES. See Styles.

CREAT. in the Mange, an usher to a riding master.

CREATION, in its direct and primary sense, denotes the causing of a substance or being to exist, which had no existence before; and, therefore, it implies no contradiction. That there is one undivided and self-existing cause, from which all other beings derive their existence, and upon which they entirely depend, is a truth capable of incontrovertible demonstration. Consequently, all beings, except the first Cause, must have been produced, or brought into being, by the power and agency of the first Cause: not produced "out of nothing," as some have inaccurately expressed it, but out of nothing besides the immense and inconceivable fulness of the self-existent Being, who must have in himself the power and possibility of all being; though we cannot comprehend or conceive in what manner, or by what kind of agency, he creates or communicates existence to beings distinct from himself. The term creation is used, in a secondary and less proper sense, when any particular bodies are formed out of such a mass of matter as seems to be utterly unfit for that purpose; when such changes are made in any substance as are generally supposed to be above the power of creatures, and to belong to God alone: - thus God created fish and fowls out of the water, and man and beasts out of the earth; though the creation of the substance of water or earth, or the matter out of which they were made, is the original sense of the word. The Hebrew word, נָבֵא (Nabai), rendered created, has, it is said, chiefly on the authority of Maimonides, been considered as implying what theologians call "an absolute creation out of nothing." But thus, it has been alleged, is not its appropriate meaning. It rather means to fashioh, form, and decorate a matter already existing; and in that connection especially, it means to retrieve from a state of desolation, and to embellish this little spot of earth, so as to render it fit for its inhabitants. In this limited sense God is afterwards (ch. ii. 7.) said to have created man, not out of nothing, but out of the dust of the ground. Joshua (xviii. 15, 18.1) bids the children of Joseph create to themselves a more ample possession, by cutting down the woods. Goliath (1 Sam. xix. 8.) directs the Israelites to create, that is, choose or prepare, a proper champion to fight with him. In Numb. xvi. 30., 1 Kings xxi. 33, and Nehem. vi. 8., it signifies to devise, as it is rendered in the cited passage of Kings; and the word devise would have been more proper in the other places. The word נָבֵא appears to have the same meaning, and, if etymology be regarded, to be the self-fame word, with the Latin para; and it is so rendered by Theodotion, τεσσαράκ, Ezek. xxii. 19., and by the Chaldee Paraphrast (יָבֵא). John xviii. 15.

Moses, in the first chapter of Genesis, has given us a summary account of the creation, at least of our earth, and its inhabitants; not indeed, in a precise philosophical manner, but so as to give the men of the age in which he wrote just and affecting notions of this stupendous work of divine wisdom, power, and benevolence, so far as was necessary to the purposes of religion, and no further. It is sufficient, therefore, that his account is true, so far as it goes, and not in any respect inconsistent with the most accurate discoveries, which have been made in later ages concerning the system of the universe, or any part of it.

In the beginning God created the heaven and the earth. (v. 1.) The heaven and the earth may comprehend either the whole universe, or all things visible and invisible. It does not therefore absolutely follow from this phraseology, that the whole universe was created all together at once, or at some one period of time: but the meaning of the expression may be, of first, referring to a prior epoch, or originally, when the universe was produced, it was brought into being by the sole power and wisdom of the almighty and eternal God. This is true, though the several parts of the universe may have been produced at different times, or at any distance of time from each other: and though God may be still creating new worlds in the immensity of space, which is not improbable, it is nevertheless true, that in the beginning of their existence, whenever that was, God created, and is still creating, them all. Thus, the sentiment which Moses seems to have been dehours of inculcating was, that the whole universe, whenever created, doth not exist by necessity or by chance; but had a beginning, and was created by the sole power of God. But as Moses here gives us a particular account of the formation of our earth, this phrase, in the beginning, may be understood proleptically with a reference to the six days; for, Accordingly, the first thing which God did, in order to make the earth a fitable habitation for man, was to give it to him and to the heavens the报复ed appearances which they now have. Before that period, the earth was imbered in water, and covered with thick darkness, &c.: in a word, it was a chaos (see CHAOS); and with respect to it, the heaven was not; that is, all those pheremonal phenomena, which constitute what we call the heaven, were yet invisible. Such a change or revolution might justly be denominated a creation, according to the sense already given of the word נָבֵא. Upon the whole we may observe, that it seems to have been a current among the ancient Jews and earlhei Christians, that the world was created by God of pre-existing unformed matter. The matter of which the earth was created, or rendered a habitable world, was "without form and void," (v. 2.) or a desolate waste, or in a state of destruction; that is, as some have supposed, a pre-existing earth reduced by some awful calamity to a chaotic state. (See CHAOS.) The earth was covered with deep water, and that water was covered with a thick darkness. But "the Spirit of God moved upon the face of the waters," i.e. the influences and exertions of the divine power actuated this dark confined mass, and digested and reduced its parts to the beautiful flate and order in which we now behold them. Some have rendered נָבֵא נָבֵא, a mighty wind, instead of the Spirit of God, which of course must be considered as the agent or instrument of divine operation. The first step in the recovery of the earth from its chaotic or desolate state, and the commencement of the six days' creation, was the production of light. This operation is expressed in the original with a beautiful conciseness and emphasis, נָבֵא נָבֵא, which even Longinus has admired, and better rendered by Wicliffe than in our translation, "Be light; and light was." The light here mentioned, says a learned annotator (Dr. Geddes), may readily be conceived to have been a partial incipient light, which progressively penetrating the dense atmosphere that enveloped the sea-covered earth, so rared and expanded it in the course of three days, as to admit the clear and uninterrupted light of the celestial luminaries. The appearance of light three days before what some conceive to have been the creation of the firm has occasioned a difficulty, which indeed is not easily resolved upon this hypothesis. Some, as Dr. Taylor in his "Scripture Divinity,"
Divinity," and the author of "Nature Displayed," have adopted the notion that light is a distinct substance from every other, and that it exists independently of the sun and other luminous bodies; and that these serve merely to excite it. Light, say they, exists in a state of expansion or diffusion through the whole universe, and at all times, by night as well as by day; and that, in our system, the sun is the great exciter, by which the substance of light is impelled, and becomes visible: and they add, that if no substance of light previously existed through the whole system, no light would appear, though 10,000 suns should at once be placed in our hemisphere. Hence it is argued, that the element or substance of light was created on the first day, and that the divine power alone might be the exciter, which made the light appear for the three first days of creation, until the sun, the instrumental exciter, was produced. "God," says the author of "Nature Displayed," and not the sun, was the author and parent of light, and it was created by his almighty fiat, before there was a sun to direct it over one part of the earth, and a moon to reflect it on the other." (See also Patrick on Gen. i. 3, &c.) But waving any remarks on this hypothesis, it is more reasonable to conceive, as others have done, that the light, which was made to appear on the first day, was nothing more nor less than an emanation from the same sun, previously existing, that illumines us; and which, though it had not yet appeared in its full glory, yet shed sufficient light through the denser atmosphere to make the surface of the terraqueous globe visible. This was evidently the idea of Original, and probably of Bashi also. The former affirms, that no one of a fancied mind can imagine, that there was an evening and a morning, during the three first days, without a sun: the latter ascribes the darkens that covered the earth, before the appearance of light, to the interposition of a dense body.

In order to dispel of the waters, which still over-poured the earth, and farther to attenuate the ambient air, God said, on the second day, (v. 6.) "Let there be an expanse, יִקְרוּמָן יִקְרוּמָן, the primary meaning of which is expansion, outstretching, attenuation, elasticity; which are the properties of our atmosphere. The word יִקְרוּמָן, used by the Greek translators, and the long prevailing idea that the heavens were a solid body, led latter interpreters to render it by the word "firmament;" and this, as well as יִקְרוּמָן, is admirable, if by solidity be meant no more than that the fluid atmosphere has density or confine sufficient to sustain the waters above it. This is the fene in which St. Basil understood the Greek term, although he had not the Hebrew to direct him to it. In his homily on the six days, he calls it a childish idea to suppose any other solidity in the firmament than that of a dense fluid; and he very justly observes, that as such the scripture every where represents the lower region of the heavens. The effect of this expansion was the separation of a part of the waters from the great mass. The lighter particles were exhaled, rarefied, and carried up into clouds, and formed the element of air. The water contained in those clouds is called the waters above the expanse, in contradistinction to those which still remained upon the earth.

Having now a purer atmosphere and a clearer sky, it is farther necessary to remove the water that still drenched the earth, and render it unfit for production. The 3d day was allotted to this operation. (v. 9—13.) The waters were called to retire into their defined receptacles, and left a portion of the chaotic mass so dry as to be fit for vegetation. Accordingly, the earth was vested in verdure, and replenished with all sorts of herbs and trees; with inherent powers to re-produce themselves, and continue their propagation to the end of time.

The next operation was performed on the 4th day, which some have supposed to have been the creation of the sun and the moon, and also the stars; but it is not necessary to infer from the history, that these did not exist at various intervals before this period. God said, as the historian proceeds with his detail, (v. 14—19.) "Let there be lights (or luminaries) in the expanse of the heavens to illuminate the earth, and to distinguish the day from the night; i.e. let these luminaries appear; or let the luminaries, which are in the expanse of the heavens, be for the purpose of illuminating the earth, &c. The sun and moon are equally called great luminaries, from their apparent brightness, and from the degree of light which they give.

On the 5th day God created all the fishes and inhabitants of the waters, and also the fowls of the air, (v. 20—25.)

On the 6th day God made animals, according to their kinds; cattic, wild beasts, and reptiles; terminating his works of creation with the formation of man in his own image, whom he constituted sovereign of the earth, and whom he provided with a suitable companion. See Adam and Eve.

Many absurdities have been charged, both by ancient and modern writers, upon the Mosaic account of the creation; some of which, we conceive, might have been precluded by restricting this account to the formation of the earth into a habitable globe, without extending it to the creation of the sun, moon, and stars, which are here mentioned merely as they bear relation to the earth, and serve for its accommodation. According to this interpretation, the operation of the 4th day was not the creation of the sun, moon, and stars, but that of affording to them their appropriate use, with respect to the new-formed earth. The whole passage describing this operation may be read, from a collation of different copies, in the following manner, (v. 14—18.)—"Let there be luminaries in the expanse of the heavens, to illuminate the earth, and to distinguish the day from the night: let them, also, be the signs of times, days, months, and years." And let them be for luminaries in the expanse of the heavens, to illuminate the earth, (conjectured to be an interpolation:) and so it was. For God having made the two great luminaries (the greater luminary for the regulation of the day, and the smaller luminary for the regulation of the night), and the stars; he displayed them in the expanse of the heavens to illuminate the earth, to regulate the day and the night; and to distinguish the light from the darkness." Dr. Geddes, in a note on v. 14, "let there be luminaries, &c," observes, that it is not necessary to suppose that these luminaries were now first created. The text does not say so; and there are many strong reasons for believing the contrary. The objection, that may seem to arise from v. 16, "God made two great lights, &c," in our version, has no force but what it derives from theological system, and an ignorance of the Hebrew idiom. To make is often equivalent to appoint to a certain use. The luminaries, then, may have long existed, and most probably did long exist before this period; although now, for the first time, they shone forth in their full splendour on this little world of man. The opinion above stated, was maintained not only by the most learned of the Jewish rabbins, but by the most learned of the Christian writers. Origen affirms, as we have already observed, that "no man of a sound mind can imagine, that there were an evening and a morning, during the first three days, without a sun;" St. Basil ascribes the darkness that covered the earth, before the appearance of light, to the interposition of an opaque body between it and the heavens. In this simple hypothesis, the whole Hebrew cosmogony is clear and consistent. It is plain that the light, if it emanated from the sun, or were excited by the sun, could not, even imperfectly, illuminate
minute more than one half of the world at once; and that while that half was illuminated, the other would remain in darkness; and this is finely called "separating the light from the darkness;" namely, by that ever changing boundary the "horizon." But, in order to move this boundary, and to carry alternate light and darkness to every part of the globe, it was necessary either to make the sun revolve gradually around its own supposed axis toward the sun; which latter motion we now know to be the fact. Light being thus separated from darkness by the aforesaid ideal boundary, they would follow one another without interruption, and produce successively those vicissitudes which we call "day" and "night;" those two terms, only, for "light" and "darkness," and the former, being falsely considered as the principal and most precious portion of time, an entire revolution of light and darkness was denominated "one day," the "evening" being the term of "light," and the "morning" the term of "darkness."

By the "fix days," in which the work of creation is said to have been performed, the generality of critics and commentators have understood, literally and strictly, for many days. Some of these days have understood as many years: some in order to favour a slow progressive creation, have made one day a period of 1000 years; and others, again, have thought the creation of the world to have been instantaneous, and that the number of days mentioned by Moses is intended only to affix our conception, who are both able to think of things in the order of succession. It has also been supposed, that the distribution of the work of creation into fix days, followed by a day of rest, was designed to enforce the observance of a weekly sabbath, both as a day of religious worship, and as a day of fasting repose to the human, and even to the brute creation.

Many among the ancients and moderns have objected to a literal interpretation of the coignomy of Moses. Whilst it has been a source of doubts and difficulties to the best commentators, it has furnished occasion of indecorous and misapplied railing and ridicule to the enemies of revealed religion in all ages. Eusebius, by way of apologie for the Mosiac account of the creation, says, (Prep. Evang. i. ii. 7.) "that it was not Moses's intention to give a philosophical account of the formation of the world, but to signify only, that it did not exist of itself, or by chance, but was the production of an all-wise and powerful creator." Cyril makes a similar reply to the scoffs of Julian, that Moses's view was to accommodate his story to the ignorance of the Jews; not to reason accurately on the subject of things, but to show that there was one God, who created them all. (Julian, Oper. and Crit. IV. 3. p. 56. &c. Ed. Lips.) Philo, (Coemop. i. i. tom. i. p. 123.) calls it a "piece of rustic simplicity to imagine, that God really employed the labour of fix days in the production of things; in which he is followed by Origen, Antonin, Ambrose, &c. Accordingly, several ancient writers have adopted an allegorical interpretation. Josephus, in the first chapter of his "Jewish Antiquities," intimates "that the story of the creation was of the allegoric kind." Philo is evidently of the same opinion. Among the moderns, and especially among those who have been referred to the chiefs of sceptical writers, the same allegorical interpretation has been generally adopted. See Blunt's "Oracles of Reason;" Toland's "Pantheicon," and "Letters to Serena;" Burnet's "Archaeologia" (i. ii. c. 8, 9.); Middleton's "Ex- essay on the allegorical and literal Interpretation of the Creation and Fall of Man;" in his "Works," vol. ii. p. 123-126; and his "Examination of Sherlock's Discourse on Prophecy," in his "Works," vol. iii. p. 193, &c. Dr. Burnet, in particular, maintains, that the Mosiac account was merely a fable. Dr. Burnet, however, according to his representation of it, a fable too absurd for a wise man, and much more for an inspired person to have formed. But surely there can be no reason for admitting this hypothesis, if the literal interpretation be capable of a philosophical explanation; more especially as Moses does not inform us where his fable ends, and where his true history begins, and as Christ and his apostles refer to the story of the creation and that of the fall (see FALL, inerpafably connected with it, not as an allegory, but true history, 2 Cor. iv. 6. xi. 3. 1 Cor. xv. 45. Matt. xix. 4. 5. 1 Tim. ii. 13, 14. 1 Cor. xi. 9. Besides, it is not very natural to suppose that God would, in such circumstances, make the circulation of a plan according to the foundation of the fourth commandment. Exod. xx. 11. 123.)

A late biblical critic (see Dr. Geddes's "Critical Remarks," vol. i.), rejects both the literal narration and the pure allegory, and alleges that the Mosiac account is a most beautiful mythos, or philosophical fiction, contrived with great wisdom, dressed up in the garb of real history, adapted to the shallow intellects of a rude barbarous nation, and perfectly well calculated for the great and good purposes for which it was contrived; namely, to establish the belief of one supreme God and Creator, in opposition to the various and wild systems of idolatry which then prevailed; and to enforce the observance of a periodical day to be chiefly devoted to the service of that creator, and the folacing repose of his creatures. In fact, says this writer, what stranger motive could be urged to preserve a people from idolatry, than by dwelling, in so minute a detail, that all the worship-objects of the surrounding nations were themselves but mere creatures, the great celestial luminaries (most probably the first objects of adoration) not excepted? He had, no doubt, particularly in view the idolatry of Egypt; where, as Bofflet elegantly says, "Tout étoit Dieu, excepté Dieu même; et cette Terre, qu'il ait voulu, pour y manifester sa gloire, fumblait être devenue un temple d'Idoles." (Dict. fur l'Histo. Univ.) Beside the sun, moon, and stars, they adored the fishes of the sea, the birds of the air, the animals of the earth, and even the herbs of the field, radishes, leeks, and onions.

1 O fœcapes gentes! quibus hæc nascenur in horitis Numina!"

It was then of the utmost importance to persuade the Israelites, who had, during their stay in Egypt, been more or less contaminated by those idolatrous rites, that every plant of the field, fih of the sea, bird of the air, and beast of the earth; the whole visible world, in short, was the production of a superior Being, to whom alone divine worship could be due. In particularising the greater quadrupeds נֹפְלָים, and the great sea-monsters דִּינְמוֹן, it is supposed that he alluded in the former, to the worship of Apis in the form of a bull, and in the latter to the crocodile, which, in some parts of Egypt, was held in the greatest veneration. The hypothesis, says Dr. Geddes, of a mere poetical mythos, historically adapted to the fenes and intellects of a rude unphilosophical people, will remove every obstacle, obviate every objection, and repel every sarcasm; whether it come from a Celsus or Porphyry, a Julian or a Frederic, a Boulangier or a Bolingbroke. See "Theory of the Earth, Fall of Man, and Genesis."

Creation, Epochs of. See EPOCH.

Creation, in a figurative sense, is used to denote a change of character and state. Thus the Jews, whom God by his providence rescued from the most abject slavery, and advanced to a new and happy state of being, attended with distinguishing
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distinguishing privileges, enjoyments, and marks of honour, are said to have been created, made, formed, and begotten. If 131. 1. 7. 15. 21. 11. v. 2. 21. 24. In consequence of this creation, they received a being or existence. If, i. 19. 1 Cor. i. 28. Thus also, when God formed believing Jews and Gentiles into one body, and brought the Gentiles out of darkness and idolatry into a new and happy state of existence, he is said to create and make them, and they are his work and workmanship. Eph. ii. 10 15. Col. iii. 10. Jan. i. 18. And as God hath created us Christians, and made us to live, we have received a new existence. i Cor. i. 20. 2 Cor. v. 17. Accordingly, the new state of life into which Christians are brought under the gospel, by its doctrines and motives, and the agency of a divine spirit, is called the new creation in Christ Jesus. Many passages might be cited, in order to shew that the term creation is applied, in a moral or spiritual sense, to a change of principles, character, and state. As ignorance, vice, and guilt are, if we may to express it, the chaos of an intelligent, moral, accountable, and immortal being, a recovery from this state to knowledge, holiness, pardon, and hope, may be fitly denominated a new creation. And as God is the primary cause of this change, and we are the subjects of it, he is our creator, and we are his creatures. Christianly, the appointed means and powerful instrument of producing it, is, in reference to its effects, a new creation.

CREBILLON, Prosper Jolyot De, in Biography, a celebrated French tragic poet, was born at Dijon the 13th of February, 1714, educated at the College Mazarin in Paris, and brought up for the bar. The lawyer, with whom he was placed, for that purpose, observing the impetuosity of his passions, urged him to attempt dramatic compositions. The two first tragedies were "Idomeneus," and "Atreus." Both met with great success. In the midst of his triumphant career as a dramatic poet, he married an apothecary's daughter, against the consent of his father, who disapproved it; but re-established him in his rights a short time before his death, which happened in 1707. Crebillon, however, was not benefited by this circumstance; the fortune of his father being hardly able to pay his debts. A few years after, the death of his wife added to the troubles of the poet, who continued involved in debts until he obtained the employment of censor of the police, and, in 1731, a place in the French academy. The speech which he delivered at his reception was in verse.

Crebillon's manner of life was extremely singular. He slept little, and lay very hard: he was always surrounded with about thirty dogs and cats; and used to smoke tobacco, to keep his room sweet against their exhalations. He made a Jeff of physic and physicians; and was for a long time afflicted with the erysipelas in his legs; which brought him at last to his grave, on the 17th of June, 1762, when he was 83 years old.

Crebillon was of a cheerful temper. Being once asked, in a large company, which of his works he thought the best? "I do not know," answered he, "which is my best production; but this (pointing to his coffin, who was present) is certainly my work."—"It is," replied the fon, with vivacity, "because he Carthaginian had a hand in it:" alluding to the report, that the best passages in his father's tragedies were written by a Carthaginian friar, who was his friend. Terror is the predominant character of Crebillon's tragedies. Being asked for the reason of this peculiarity, he replied, "I had no choice: Corneille has exhausted heaven; Racine, the earth; I had nothing left but hell; and I have thrown myself headlong into it." His "Atreus" was performed eighteen nights running. An Englishman, who was at its first representation, observed that this tragedy was better calculated for the London than for the Paris stage; and that, although an Englishman, he had staggered with horror at the cup-full of blood. "Electre" had less success; "Rhadamele," in 1711, was performed thirty times, and ran through two editions in a week; "Xerxes," in 1714, had but two representations; "Semiramis," in 1717, was much criticized; "Pyrrhus" had some success when it came out, but failed when it was again performed in 1758. "Cathe" was performed in 1749, when Crebillon was 72 years old; and he wrote the "Triumphate," his last tragedy, when he was 80 years of age.

Crebillon's style is unequal and incorrect: he has been much criticized on that account by Boileau, who witnessed his first successes, and by Voltaire, to whom he was opposed as a rival for dramatic fame. In order to remove Voltaire from court, Crebillon was recommended as a superior poet to Madame de Pompadour. Hearing that he was poor, this lady obtained for him a pension of 2400 French livres. When Crebillon went to thank his patroness, he received him uncommonly well, being struck with his venerable and interesting figure; but she was ill, and at the instant the old poet was kissing her hand, the king entered the room. "Alas! Madame!" exclaimed Crebillon, "the king has surpassed us: I am undone." This exclamation, from the mouth of an old man of 80, diverted Louis XV. exceedingly. The monarch zealously patronized Crebillon ever after, got his works printed at the press of the Louvre, and, after his death, erected a marble monument to his memory in the church of St. Gervais, where his remains are interred.

The best editions of Crebillon, besides that of the Louvre, in 2 vols. 4to., are that of 1750, in 2 vols. 12mo.; that of 1752, in 3 very neat volumes, small 12mo., of 1755, in 3 vols. 8vo., with cuts; and the last Paris edition by Defrav, published a few years ago.

Labarre, in his "Course de Littérature," pronounces that Crebillon, though a bad writer, will maintain his station among men of genius, but cannot be ranked in the chfs of masters and models. Marmontel calls his verses après et durs, fluff and harsh. Nouveau Dictionnaire Historique. Mémores de Marmontel.

Crebillon, Claude Prosper Jolyot De, son of the poet, was born at Paris on the 12th of February, 1757, and died on the 12th of April, 1777, at the age of 12. If his father has sometimes been called the Aeschylus of the French, he may be denominated their Petronius. With a matterly hand he has delineated in his novels the vices, follies, and vanities of the French. His style is rather defective; but his works betray an intimate knowledge of the most hidden recesses of the human heart. He lived with his father as with a friend and brother. His marriage with an English woman, of which the poet disapproved, caused but a very slight altercation between them.

The principal works of Crebillon the Younger are, "Tangai & Nécrain;" "Les Egaremens du Cœur et de l'Esprit;" "Le Sphinx;" and "Les Lettres Athénienes." A complete edition of them has been published in 1790, in 11 vols. 12mo. Nouveau Dictionnaire Historique.

CRECCA, in Ornithology, the Amsas crecca, with a green spot on the wings, and a white line above and below the eyes; the common teal of English writers. See Amsas and Teal.

CRECHIO, in Geography, a town of Naples, in the province of Abbruzzo Citer, 112 miles E. of Civita di Chieti.

CRECY, or, as it is improperly spelled in English, Crepis, a small town of France, in the department of the Somme, 36 miles N.W. of Amiens, and 120 N. of Paris, chief place of a canton, in the district of Abbeville, with 1738 inhabitants.
The battle was begun about 3 o'clock in the afternoon by a body of Genoese cross-bowmen in the French service, who, letting their weapons fly at too great a distance, were presently routed by a shower of arrows from the English archers. The Earl of Alençon, after trampling to death many of the flying Genoese, made a furious attack on the corps commanded by the prince of Wales. The earls of Arundel and Northampton advanced with the second line to rout the prince. The battle raged for some time with uncommon fury. Anxious for the safety of the prince, the Earl of Warwick sent to interdict the king to advance with the third line. But Edward, who had taken his stand on the top of the hill, from whence he had a full view of both armies, asked the messenger whether his son was unhurt, wounded, or killed; and being answered that he was unhurt, and performed prodigies of valour: "Go, then," said the king, "and tell my son and his brave companions, that I will not deprive them of any part of the glory of their victory." This flattering message inspired the prince and his troops with redoubled ardour. The king of Bohemia, the Earl of Alençon, and many other noblemen, being slain, the whole first and second line of the French were put to the flight. Undismayed at the slaughter of his troops, and at the fall of so many princes, the French king advanced to the charge with the line under his immediate command. But it soon shared the same fate with the other two. Philippe, unhurt and wounded, was carried off the field by John de Hainault. Of his mighty army, which at the commencement of the battle consisted of 130,000 men, only five knights and about 60 soldiers fled with him. Such was the celebrated victory of Crécy, the greatest ever gained by any king of England. Henry's History of England.—There is another Crécy, a small town of France, in the department of Seine and Marne, in the district of Meaux, with 1007 inhabitants. It is situated 3 miles S. of Meaux, and is the chief place of a canton, which, upon a territorial extent of 145 kilometres, has 23 communes and 12,775 inhabitants.

CREDEN Head, a cape of Ireland, on the west coast of Waterford harbour. W. long. 6° 59'. N. lat. 52° 10'.

CREDDY, a river of England, which runs into the Exe, near Exeter.

CREDENCE TABLE, from Credentia, low Latin, "Tabula feu mensa in qua vasa ad convivium reponeuntur." Du Cange; a small table placed on the right hand side of the high altar, in Roman Catholic churches, for the purpose of holding several articles made use of in the service of the mass. Ceremoniale Episcop. lib. i. cap. 12.

CREDENTIALS, letters of credit and recommendation; especially such as are given to ambassadors, plenipotentiaries, &c. to foreign courts.

CREDI, D. Lorenzo, in Biography, a Florentine painter, born in 1454. His family name was Sciaroplasta; but being placed, when young, under a goldsmith called Credi, he assumed that name, according to the ancient Florentine custom. He afterwards entered the study of And. Verrocchio, and, with the exception of his condition, the celebrated Lionardo da Vinci, may be considered the best scholar of that master. His works were designed with great diligence, and painted with a delicacy and neatness which are peculiar to him; infomuch that his picture of the S. S. Nicolo and Giuliano, in the church of Sta Maria Maddalene at Florence, is added by Vafari as an example of clear and beautiful execution. He sometimes is said to have copied the works of Lionardo with such wonderful exactness, that the original could not be distinguished from the imitation. His style appears to unite something of the early manner of Da Vinci with that of Pietro Ferrugino, the other friend of Credi; but he never attained the boldness and breadth of chiaro- scuro which characterized the works of Lionardo, although he continued to live many years after the decease of that great artist. His most celebrated picture is the Nativity, in the church of St. Chiara at Florence. Several circular pictures of the Holy Family, by this artist, are dispersed in that city, which unite a considerable portion of grace to some originality of design. He died in 1530. Lanzi. Orlandi.

CREDIBILITY, a quality in objects whereby they become fit to be believed. See FAITH.

A thing is said to be credible, which is not apparent of itself, nor is certainly to be inferred either from the cause or effect: and yet has the attestation of a truth. Things which appear immediately true, as the whiteness of snow, or that the whole is equal to its parts; are not said to be credible, but evident. Thos to which we only give our assent in virtue of some competent authority or testimony.
of others, are, by the schoolmen, said to be credible. In the Philosophical Transactions we have a mathematical computation of the credibility of human testimony. See Evidence.

CREDIT, in Commerce, a mutual trust or loan of merchandise or money, on the reputation of the probity and solvency of a dealer.

Credit is either public or private; the latter being that of individuals, and the former belonging to individuals connected by social intercourse, and forming communities or nations.

Every trader ought to have some cattle, flock, or portion of his own, sufficient to carry on the traffic he is engaged in: they should also keep their dealings within the extent of their capital, so that no disappointment in their returns may incapacitate them from supporting their credit. Yet traders of worth and judgment may sometimes lie under the necessity of borrowing money for carrying on their businesses to the best advantage; but then the borrower ought to be so just to his own reputation and to his creditors, as to be well assured that he has sufficient effects within his power, to pay off his obligations in due time. But if a trader should borrow money to the extent of his credit, and branch out into trade, so as to employ it with the same freedom as if it was his own proper flock; such a way of management is very precarious, and may be attended with dangerous consequences. Merchants ought never to purchase their goods for exportation upon long credit, with intent to discharge the debt by the return of the same goods; for this has an injurious influence on trade several ways: and if any merchant has occasion to make use of his credit, it should always be for the borrowing of money, but never for the buying of goods; nor is the large credit given to wholesale traders, a prudential or justifiable practice in trade.

The public credit of a nation is said to run high, when the commodities of that nation find a ready vent, are sold at a good price, and when dealers may be safely trusted with them; also when lands and houses find ready purchasers; when money may be easily obtained for commercial purposes, the promotion of important objects of a national kind, or the service of the state; and when it may be borrowed, either at a low interest, or without difficulty on higher terms; when people think it safe and advantageous to venture large flocks in trade, and when notes, mortgages, &c. will pass for money. See Bank and Paper Money.

Credit, letters of, are those given to persons in whom a merchant, &c. can trust, to take money of his correspondent abroad, in case they happen to need it.

Credit is also used for the currency which paper, or bills, have with the public, or among dealers.

In this sense, credit is said to rise, when in negotiating the shares of a company, they are received and sold at prices above par, or the standard of their first creation. 

Discount is opposed to credit, and is used when money, bills, &c. fall below par. These terms, however, are used in a more lax sense, when they are applied to the rise or fall of the shares or flocks of any public company, whether they were at, above, or below par. The price of public credit in England was formerly the rise and fall of its public or national funds; but since the plan of annexing to any capital borrowed and funded, a certain sum designed to form a sinking fund for liquidating or reducing it, has been adopted by modern policy, and the gradual increafe of this fund is regularly applied to the purchase of floating stock, the funds admit of very little advancement or de-

CREDIBILITY denotes a weakness of mind, by reason of which a person yields his assent to preposterous or false, before he has considered their evidence. See Evidence.

CRED, in Geography, a river of Scotland, which rives
niles in the S.E. part of Ayrshire, separates Kircudbright
from Wigtownshire, and discharges itself into Wigtown bay.
There is a small village on the E. side of Wigtown bay,
near the mouth of the river Cree, which is
navigable six miles higher to Carty port, near Newton-
Stewart, a considerable village, pleasantly situated in a fer-
tile country, abounding with all the real necessaries of life,
particularly extensive woods of full-grown trees, which
overhang the banks of the Cree, and the waters which fall
into it from the North.

CREE, Indians, Indians of North America, who occupy
the district W. of little lake Winnipeg, and fort Dauphin,
in upper Canada.

CREECH, Thomas, in Biography, chiefly celebrated
for his poetical translations, was born in 1679 at Brandon
in Dorsetshire. He was inducted into grammar learning
at the free-school of Sherborne, and from thence he went
to Wadham college, Oxford. In 1683 he took his degree of
M.A., but he had already published his translation of
Laurensius, by which he established his reputation as a
scholar; and on account of which he was probably elected
professor-fellow of All-souls college. Creech translated
many other pieces from the ancient writers; as parts of
Ovid and Virgil; the greater portion of Horace, one of
Juvenal's satires, and the Idylls of Theocritus. This
last he dedicated to his old master who had instructed him
in the knowledge of the languages. In the year 1699 he was
presented to the rectory of Welwyn in Hertfordshire, but
put an end to his life before he took possession of it. It is
not perfectly ascertained what led to this fatal catastrophe;
none have thought it the effect of disappointed love, but
others with more reason impute it to certain pecuniary em-
bracements, and the cold reception which he met with
from a friend to whom he applied for assistance. He was
found hanging in his study three days probably after he
had committed the rash action. He is said to have been of
a very morose temper, which engaged him in many disputes.

CREECH-Hill, in Geography, a remarkable eminence in
the island of Purbeck in Dorsetshire. In the government
trigonometrical survey in 1794 the situation of the ancient
barrow on this hill was determined, by an observation from
Nine Barrow-down, distant 24163 feet and bearing 83° to
57" S.E. from the parallel to the meridian of Dunnono, and
another from Wingreen, distant 125334 feet; whence it
deduces its latitude 50° 38' 14.7" N., and its longitude 2°
14' 15.9, or 8° 25 W. of Greenwich.

CRED, in Geography, a short or summary account of
the chief articles of the Christian faith; thus called from
the first word thereof in Latin, credo, I believe. See
Symbol.

The principal of these creeds are the Apostles', the Atha-
nasian, and the Nicene.

Creed, Apostles', is so called, because for many ages it
was believed to have been framed by the apostles before
they left Jerusalem. The first person who gave this ac-
count of its original was St. Ambrose, towards the latter
end of the fourth century; in which he is followed by
Rufinus, Jerome, and several others; and some have even
asserted, that each apostle supplied his particular article; and
according to the number of the Apostles, the creed was
divided into 12 articles, one article being affixed to each
Apostle. See Symbol.) But there are many reasons
why this account cannot be admitted: if a creed of such
high authority had existed in the Christian church, it is re-
asonable to suppose that it would have been mentioned
some of the earlier writers in the four first centuries, be-
fore the time of St. Ambrose; that it would have been
referred to as a standard of doctrine by the more ancient
councils; and that it would have superseded the necessity
of compounding new creeds, which was done on many occa-
sions. Besides, the several copies of this creed, of
which the principal are the vulgar or Roman, the Aqui-
itan, and the Oriental, differ from one another in many
articles; and this difference cannot easily be reconciled
with the notion, that it was framed by the apostles, and
transmitted from them to their successors. To which
we may add, that some of the articles contained in it
were interpolated in opposition to errors that sprung up in
the Christian church, long after the time of the apostles.
However, this creed is a very ancient composition, and
upon the whole an unexceptionable summary of the
Christian doctrine, and much superior to compositions
of a similar kind of later date. It might in part have
been transmitted down from the apostles, and afterwards
gradually enlarged in its present form as heresies arose
and occasion required. Although the exact form of the pre-
cent creed cannot pretend to be so ancient as the time of
the apostles by 400 years; yet a form not very different from
it was used long before, as we learn from Irenæus and Ter-
tullian. It seems, however, that, in the first ages of Chris-
tianity, every church was at liberty to express the funda-
mental articles of the Christian faith in any manner, which
was thought fit pro re nata, or as occasion offered. After its
introduction, this creed was received in all ages with the
greatest veneration and esteem, and for several centuries,
such deference was paid to it, that it was not only used at
the administration of baptism, but it was usually, if not always,
read in every public assembly as the standard and basis
of the Christian faith, to which the whole congregation
thus hush said by saying "Amen." The primitive Christians,
however, affected an inaccountable secrecy in their faith
and worship, and, therefore, did not in their assemblies pub-
lhely recite the creed, except at the times of baptism, which,
unless cases of necessity occurred, were only at Easter and
Whitsun tide; so that the confiant repetition of the creed in
the church was not introduced till a long time after our Sa-
vior's incarnation. The repetition of a creed at every as-
fembly was appointed in the eastern church by Timothy,
archbishop of Constantinople in the reign of Anastatus,
who died A. D. 361; but before this time the creed was
only repeated on the day immediately preceding Good
Friday, and its repetition on that day was first appointed
by the 46th canon of the council of Laodicea. In the western
churches the general and constant reading of the creed does
not seem to have prevailed, till almost 500 years after
Christ, when the third council of Toledo enjoined, that
the creed should be repeated with a loud voice every Lord's
day. The creed thus appointed to be read, both by
archbishops Timothy and the council of Toledo, was the
Nicene or Constantinopolitan creed, which, for reasons pe-
culiar to that age, in some measure eclipsed the Apostles'
creed, although in a little time this latter recovered its
former value and estimation. Lord King's Crit. Hist. of
the Apostles' Creed.

Creed, Athanasian, has been falsely attributed to Atha-
nasius, bishop of Alexandria, who lived and wrote in the
fourth century; and who died A. D. 373: it is neither men-
tioned nor referred to in any of his genuine works; nor is it
likely that he should himself compose a creed, as he and all the
orthodox divines of those times constantly refer to the Nicene
creed as the standard of their faith. No notice is taken of
this creed by writers who immediately succeeded him; it was never
appealed
appealed to for the decision of the controversy relating to the procession of the Spirit between the Eastern and Western churches, in the seventh and ninth centuries; it condemns the Macedonian, Nestorian, and Eutychian heresies; but as it is never mentioned in those controversies, we may conclude that it did not then exist: nor is it quoted, fay some, till one thousand years after Christ. Accordingly, the learned Dr. Cave (Hist. I. 1.) that it never was cited till about the year 867, above 400 years after the death of Athanasius, and that it was not received in the church till very late as about the year 1000. Indeed Dr. Waterland, in his "History of the Creed," intimates, that it was written by some person about 60 years after the death of Athanasius; but he allows that it did not appear in the churches till a century or two after. It had never the sanction of any council, and it is doubtful whether it was ever admitted into the Eastern church. Fabricius is of opinion that it was first written in Latin long after the fifth century, and afterwards translated into Greek. It is appointed to be read in the service of the church of England thirteen times in the year. Vol. II. de Symbols. Fabr. Bib. Graec. vol. v.

As to the uncharitable and damnable clauses of this creed, they seem to have been reprobated by the most eminent men in the church, and even by those who professed to believe the doctrines that are contained in it. It seems to have been one of the principal reasons of Mr. Chillingworth's long perilling in his refusals to subscribe the 39 articles; and he was one of the brightest ornaments and ablest defenders (says Dr. Clarke) the protestant cause ever had. Of the censure sentences in this creed he observes, that they are not only false, but in a high degree presumptuous and schismatical. "The account given of Athanasius's creed," says the excellent archbishop Tillotson, in a letter written from Lambeth, Oct. 23, 1664, to a right reverend prelate, "seems to me nowise satisfactory; I wish we were well rid of it." The learned bishop Taylor in his "Liberty of Prophecy," (Sect. n. § 36.) has the following observation respecting it: "If it were considered concerning Athanasius's creed, how many people understand it not, how contrary to natural reason it seems, how little the scripture fays of those curiosities of explication, and how tradition was not clear on his side for the article itself, much less for those forms and minutes; it had not been amis if the final judgment had been left to Jesus Christ: and indeed to me it seems very hard to put uncharitable fences into the creed, and so to make it become as an article of faith. "It certainly is to be lamented," says Dr. Tomlaine, the present bishop of Lincoln, in his "Elements of Christiant Theology," (vol. ii. p. 220.) "that affirmations of so pernicious a nature," referring to the damnable clauses, "unexplained and unqualified, should have been fed in any human composition. "I am ready to acknowledge (p. 222.) that, in my judgment, notwithstanding the authority of former times, our church would have acted more wisely, and more consistently with its general principles of mildness and toleration, if it had not adopted the damnable clauses of the Athanasian creed. Though I firmly believe that the doctrines themselves of this creed are all founded on scripture, I cannot but conceive it to be both unnecessary and presumptuous to say that "except every one do keep them whole and undefiled, without doubt he shall perish everlastingly." Dr. Horley, the late bishop of St. Asaph, avowed similar sentiments.

CREED. Nicene, was composed and established as a proper summary of the Christian faith by the council at Nice, A. D. 325, against the Arians. This is also called the Constantinopolitan creed, because it was confirmed with some few alterations by the council of Constantinople, A. D. 381. The greater part of this creed. viz. as far as the words "Holy Ghost" was formed and settled by the council of Nice; which council also added the following clause: "The holy catholic and apostolic church anathematizes those who say there was a time when the Son of God was not, and that before he was begotten he was not, and that he was made out of nothing, or out of another substance or essence, and is created, or changeable, or alterable." (Socrat. Eccl. Hist. i. 8.) Our church hath endorsed the anathematizing clauses at the end; and one cannot wish, says Dr. Jortin, that the Nicene fathers had done the same: the rest of this creed, after "Holy Ghost," was added at the council of Constantinople, except the words "and the Son," which follow the words "who proceedeth from the father," and they were inferred A. D. 447. The addition made at Constantinople was occasioned by the denial of the divinity of the Holy Ghost by Macedonius and his followers; and the creed thus enlarged was immediately received by all orthodox Christians. The insertion of the words "and the Son" was made by the Spanish bishops, and they were soon after adopted by the Christians in France. The bishops of Rome for some time refused to admit these words into the creed; but at last, in the year 883, when Nicholas I. was pope, they were allowed; and from that time they have been fixed in the Nicene creed, in all the western churches, but the Greek church has never received them. These three creeds are contained by the eighth article of the church of England, "thoroughly to be received and believed, for they may be proved by most certain warrants of Holy Scripture? they are used in the public offices of the church; and subscription to them is required of the clergy, and as the law formerly allowed of dissenting teachers properly qualified under the toleration act. See Toleration.

CREEK, a part of a haven where any thing is landed from the sea. So many landing places as there are in a harbour or port, so many creeks there are. It is also said to be a shore or bank whereon the water beats, running in a small channel from any part of the sea; from the Latin crepide. This word is used in the lat. 4 Hen. IV. c. 29. and 5 Eliz. c. 5.

CREEK Moor, in Dorsetshire, is a wharf at the northern extremity of Pool harbour, in the road between Pool and Lyme's water. See Canal.

CREEK, a part of the county of Georgia, is a nation, or Creek Indians, an Indian nation of America, so called from the creeks and rivulets with which their country abounds, and known also by the names of Mykogolyce, and Mykogolees, which inhabits the middle parts of Georgia. The country they claim is bounded N. by the 34th degree of latitude, and extends from the Tombigbee river to the Atlantic ocean, though they have by different treaties ceded a part of the tract on the sea-coast to the State of Georgia. The western line of their settlements and villages is formed by the Coosa river, and its main branches; but their hunting grounds extend 200 miles further to the Tombigbee, which separates their country from the Chacoaws. Their territory is naturally divided into three districts, viz. the Upper Creeks, Lower and Middle Creeks, and Seminole. The upper district includes all the waters of the Tallapoosco, Coosahatchee, and Alabama rivers, and is called the Abacooses. The lower or middle district includes all the waters of the Chattohoosie and Flint rivers, down to their junction; and although occupied by a great number of different tribes, they are altogether called Cowetaulcas, or Coweta people, from the Cowetan town and tribe, the most ancient and warlike of any in the whole nation. The lower or southern district takes in the river Appalacheeola, extends to the point of East Florida, and is called the country of the
the Seminoles. The Creeks or Muskogulges reckon 55 towns besides villages; and they have established a powerful empire upon the ruins of that of the Natchez. After their emigration from the west, beyond the Mississippi, their original native country, they built settlements on the Oakmulge fields; and gradually subdividing their surrounding enemies, they strengthened themselves by admitting into their community the vanquished tribes; thus they rendered themselves victorious over the Chickasaws, and formidable to all the nations around them. The smallest of their towns contain from 20 to 30 houses, and from 150 to 200. These houses stand in clusters of 4, 5, 6, 7, and 8 together, irregularly distributed along the banks of the rivers or small streams. Each cluster of houses contains a clan, or family, of relatives, who eat and live in common. Each town has a public square, hot-house and yard near the centre of it, appropriate to various public usages. The principal towns of the upper and lower Creeks that have these public squares, beginning at the head of the Coosa, or Coosawatchee river, are: Upper Utales, Abacooches, Tatchoo, Coosah, Oaktoochooches, Pin Catches, Pocuntallahes, Weeokes, Little Talasfee, Tulkeegees, Coofadas, Alabama, Tawasa, Pawactas, Anobas, Auhobs, Weelumpkes Big, Weelumpkes Little, Waccacoyas, Wackfoy, and Ochese: the following towns are in the central, inland, and high country, between the Coosa and Tallapooscoee rivers, in the district called the Hillsbees, viz. Hilkeees, Killekeko, Oakeohey, Slakagulges, and Wacacoyas. On the waters of the Tallapooscoee, from the head of the river downward, are the following: viz. Tuckabotchee, Telafhi, Tutaccau, New York, Chalac-paulley, Loguypogue, Utales Big, Ufala Little, Ufala Big, Sogahatches, Tuckabataches, Big Tallooscoee, or half-way-house, Clewakays, Coosataches, Coodahenes, Shawanos or Savannes, Kenialaka, and Muckelkees. The towns of the Lower Creeks, beginning on the two waters of the Chattahoochee, and so downward, are: Chelu Niny, Chattahoochee, Holitatoga, Cowetas, Cufflaha, Chalagatfoor, Broken Arrow, Euchees Severals, Hitchates Severals, Palahuido, and Chewackalas: besides 20 towns and villages of the little and big Chehaws, low down on Flint and Chattahoochee rivers: their country is hilly, but not mountainous, and the soil is very fertile and well watered, their agriculture is as far advanced as it well can be, without the proper implements of husbandry. They cultivate tobacco, rice, Indian corn, potatoes, beans, peas, cabbage, melons, and have plenty of peaches, plums, grapes, strawberries, and other fruits. A very large majority of the natives being devoted to hunting in the winter, and to war or idleness in the summer, they cultivate but small parcels of ground, barely sufficient for subsistence. But many individuals, particularly on Flint river, among the Chehaws, who possess a number of negroes, have fenced fields, tolerably well cultivated: but as they have no ploughs, they break the ground with hoes, and scatter the seed promiscuously over the ground, in hills, but not in rows: they rear horses, cattle, fowls, and hogs: the only articles they manufacture are earthen pots and pans, baskets, hornet-ropes, or halters, smocked leather, black marble pipes, wooden spoons, and oil from acorns, hickory nuts, and chestnuts. Their land is a common stock, and any individual may remove from one part of it to another, and occupy vacant ground wherever he can find it. From their unsettled and roving disposition, their number cannot be easily or exactly ascertained. The fighting men are estimated at between 5 and 6,000, exclusive of the Seminoles, who are of little account in war, except as small parties of marauders. The whole number of persons that compose the Creek nations may be reckoned at about 25 or 26,000.

Every town and village has one established white trader in it, and generally a family of whites, who have fled from some part of the frontier. The Creeks are a well-made, expert, hardy, sagacious, politic people, jealous of their rights, and ever from parting with their lands. They are barely armed, having few rifles, and being mostly armed with muskets. For about 40 years past, they have had little intercourse with any foreigners, except the English, to whom they are much attached, and whom they highly respect. Their language is soft and musical, and is spoken through the whole confederacy, though composed of many nations, who have a speech peculiar to themselves, and also by their friends and allies, the Natchez, the Chickasaw and Chickasaw language is, say the Muskogulges, a dialect of theirs. These people are frequently laudable for prohibiting the use of spirituous liquors. One of the principal articles in their treaties with the white people is, that no kind of spirituous liquors shall be sold or brought into their towns. Most of their favourite fongs and dances they derive from their enemies, the Chickasaws, who are famous for poetry and music. Their music is both vocal and instrumental; but of the latter they have scarcely anything that deserves the name; such are the tambour, rattle-gourd, and a kind of flute, made of a joint of reed, or the tibia of the deer's leg, which yields a hideous melancholy discord, rather than harmony; but the tambour and rattle, accompanied with their sweet low voices, produce a pathetic harmony, in which they keep time together; the countenance of the musician expressing, at proper intervals, the solemn elevated state of his mind, and the harmony touching the feelings of the attentive audience, and produces an universal exhalation of delight and tranquillity throughout the assembly. Their music, both vocal and instrumental, united, keeps exact time with the performers or dancers. In dancing, their most admired and generally practised is hop, flapping, and alternate; both feet moving forward one after the other, first the right foot foremost, and next the left, moving one after the other, in opposite circles, i.e.: first a circle of young men, and within a circle of young women, moving together opposite ways, the men with the circumference of the circle, and the females in a contrary direction; the men strike their arms with the open hand, and the girls clap hands, and raise their shrill sweet voices, answering an elevated shout of the men at flated times of termination of the flanas; and the girls perform an interlude or chorus separately. In accomplishment with their dances, they have fongs, martial, bacchanalian, and amorous,—and they have also moral fongs, which seem to be the most esteemed and practised, and answering the purpose of religious ceremonies. Their devout moral fongs or elegies have a quick and sensible effect on their passions, and they manifest a lively affection and sensibility in their countenances. They have also a variety of games for exercise and pastime, some peculiar to the men, others to the female sex, and others in which both sexes are employed. The ball-play is esteemed the most noble and manly exercise. This game is exhibited in an extensive plain usually contiguous to the towns: and in this the inhabitants of one town play against those of another, in consequence of a challenge, where the youth of both sexes are often engaged, and sometimes take all their whole substance. Here they perform amazing feats of strength and agility. The game principally consists in taking and carrying off the ball from the opposite party, after being hurled in the air, between two high pillars, which are the goals, and the party which bears off the ball to their pillar wins the game. Each person has a racket or hurl, which is an implement of curious construction, resembling a ladle or small hoop net, with a handle about three feet in length, the
hoop and handle of wood, and the netting of thongs of raw hide, or tendons of an animal. The foot-ball is likewise a favourite diversion. All their games are terminated with flailing and dancing in the public square. They have, besides, festivals almost for every month in the year, which are chiefly dedicated to hunting and agriculture. The principal of these is the bull, or feast of first-fruits, which seems to end the last, and begin the new year. There are three in August, when their new crops of corn are arrived at maturity, and every town celebrates it separately, when their new harvest is ready. If they have any religious rite or ceremony, this festival is its most solemn celebration. They begin with cleansing their houses, squares, and the whole town, of their filth, and confusing all their old utensils and provisions with fire. Then follows a fast of three days, during which the fire in the whole town is extinguished, and they will never from the gratification of every appetite and passion. A general amnesty is proclaimed, all malefactors may return to their town, and they are absolved from their crimes, which are now forgotten, and they are restored to favour. On the fourth morning, the high priest, by rubbing dry wood together, produces new fire in the public square, whence every habituation in the town is supplied with the new and pure flame. The women then go forth into the harvest-field, and bring from thence new corn and fruits, which, being duly prepared, are solemnly brought together with drink, into the square, where the people are assembled, in their new clothes and decorations. The women and children place themselves in their separate families, and in the evening repair to the public square, where they dance, sing, and rejoice through the whole night, observing a proper and exemplary decorum: this continues three days, and during the four following days they receive visits, and rejoice with their friends from neighbouring towns, who have punished and prepared themselves. The Mulkogulges allow of polygamy in the utmost latitude; for every man takes as many wives as please; but the birn is queen, and the others her handmaids and associates.

The youth of both sexes are fond of decorating themselves with external ornaments. The men shave the head, leaving a craft or comb, beginning at the crown, where it is frizzed and stands upright, covering the hinder part of the head and neck, and terminating behind in long hair, ornamented with pendant silver quills, and jointed silver plates. Their ears are lacered, and a piece of lead is fastened to the cartilage, which extends it to a great length, and which is then bound round with braids or silver wire in the form of a bow or crecent, decorated with soft white plumes of heron feathers. Their temples are encircled with a curious diadem or band, ingeniously wrought or woven, and decorated with flumes, beads, porcupine quills, &c.; the front part of it being embellished with a high waving plume of crane or heron feathers. Their clothing is simple and frugal. The head, neck, and breast are painted with vermilion; and some of the warriors have the skin of the breast, or mucosal parts of the body, inscribed with hieroglyphs: scrolls, flowers, figures or animals, stars, crescents, and the sun in the middle of the breast; which flains are given in youth, by prickng the skin with a needle, and rubbing in a blue tin tincture. The decorations of drets are restricted to particular occasions; for the male youth are perfectly naked till they attain the age of twelve or fifteen years; but the females always wear a jacket, flap, and bulkin, which reach to the middle of the leg. The junior priests or students constantly wear the mantle or robe, which is white; that of others being of a streaked or blue colour; and they have a great owl skin cased and stuffed, and is well executed as almost to represent the living bird, having large sparkling glass birds or buttons fixed in the head for eyes:—this edition of wisdom and divination they sometimes wear as a crest on the top of the head; at other times it is borne on the arm, or on the hand. These bachelors are always distinguishable from other people by their taciturnity, grave and solemn countenance, dignified step, and by their fixing to themselves songs or hymns, in a low sweet voice, as they stroll about the towns. For a farther account of the manners and customs of these people, see Bartram's Travels through North and South Carolina, Georgia, &c.

Creeks. Creeks' Creeping place, lies on Tennessee river, about 40 miles E.S.E. of the mouth of Elk river, at the Muscogee shoals, and 36 S.W. of Nickajack, in the Georgia Western territory.

CREEK, in Rural Economy, a name often previously applied to signify a fort of stone contrived in different forms, for the purpose of performing different operations on sheep, and other small animals: such as spearowing, clipping, slaughtering, &c. It is in much use in some districts, while in others it is almost wholly unknown.

CREEENGLES, Criques, probably derived from kriechen (Berg), to run into twigs, in Natural Architecture, are small ropes spliced into the bolt ropes of the tails of the main-mast and fore-mast, into which the bowling bridles are made fast; and are also to hold by when a bonnet is shaken off.

CREEPER, in Ornithology, the English name of the Certhia; which see.

Creeper, New Zealand. See Merops New Zealand.

Creeper, yellow thorneted, and black and white creeper. See Motacilla longicauda and varia.

Creeper, in Sea Language, a sort of grappel, having a flanck, and four hooks or claws, but without flocks; used for recovering things that may be cast overboard.

CREEPING, Repens, in Botany, is applied either to a root or flm, when either of them is extended horizontally, and throws out fibres for the absorption of nourishment as it goes. See Root and Radicle. A creeping root, radicis repens, is a kind of subterraneous item, the fibres, which it sends forth here and there, being the only efficient part of the root. It serves powerfully for the increas of such plants as are furnished with it, whose vital principle is often to entirely devoted to the root, as not to have sufficient energy left to perfect the seeds. The Mints, the Trifolium repens, or Couch-gras, and various others of the latt-named tribe, defined to inhabit and to bind down the sandy shores of the ocean, all exemplify this kind of root. In some other plants, particularly such as grow paraclitically on the items or branches of trees, the upper side of the root is frequently bare, witnesses the genus Epidendrum; and the same may be observed of some species of Iris.

A creeping item, caulis repens, (see Cauis,) runs either along the ground, or over rocks, walls, or the trunks of trees; in every case throwing out radicles for the absorption of nourishment, as, in many species of Cinquefoil or Potentilla, several brambles, and other plants. When the fibres of the item serve merely to attach it to other bodies for support, as in the ivy, such an item is called radicans, chming, a term by many botanists not sufficiently distinguish from the above. S.

CREGER'S TOWN, in Geography, a town of America, in the state of Maryland, and Frederick county, on the W. side of Monocacy river, between Owings and Hunting creeks, which fall into that river; 5 miles S. of Emmittsburg.
burg, near the Pennsylvania line, and about 11 N. of Frederic-town.

CREGLINGEN, a small town of Franconia, on the Tabor, which formerly belonged to the king of Prussia, as margrave of Anspach.

CREICHGAIU, a canton of Germany, in Suabia, which formerly belonged to the free nobility of the German empire, and as such consisted of several lordships, under the immediate county and barons of the empire. It is now part of the kingdom of Wurttemberg.

CREIL, in Latin Creillum, a small town of France, in the department of the Oise, on the river Oise, 6 miles N.W. of Senlis, and 37 miles N. of Paris. It is the chief place of a canton in the district of Senlis. It has 10,000, and the canton 12,492 inhabitants, living in 19 different communes, upon a territorial extent of 2,253 kilometres.

CREILSTEIM, a small town of Franconia, on the river Saat, with an ancient citadel, and a grammar-school. It formerly belonged to the king of Prussia, as margrave of Anspach.

CREIPOLOUS, in Ancient Geography, a mountain of the Peloponnessus, in the Argolide, situated on the route from Tegesa to Argos, according to Strabo.

CRELIUS, John, in Biography, was born in Franconia, in the year 1592. He was indebted to his father for the early part of his school-learning, and afterwards purfued his studies at Nuremberg. At this place he was distinguisfted for great application, and excellent talents, and obtained the respect and favour of his superiors. He fludied successively at some other German academies, and became an excellent linguist, and deeply versed in the Aristotelian philosophy. He next began to read with attention the works of the most celebrated divines, intending to make theology his principal pursuit. As, however, he meant to form his own opinions independently of the authority of great names, he previously formed the liberal determination of embracing no speculative doctrines concerning the truth of which he thought not be perfectly satisfied from his own enquiries. He soon found reason to be dissatisfied with the Lutheran system, in which he had been brought up, and disavowed his belief in it. By this profeflion of his faith, or as his contemporaries would rate it, of his want of faith, he was prevented from rising to that eminence to which he would have otherwise attained; he resigned his pretensions to the office of inspector of youth, to which he was nominated in the year 1610. This was a great caufe of mortificacion to his friends, who had anticipated for him the highest preferments in the church. Crellius, however, determined, according to the maxim of his great Master, to make every thing, even the attachment of friends, and the nearest relations, subfervient to his fervice of duty; he accordingly left his native country, and removed to Poland, where he had not a single friend; but the spirit of enquiry was cultivated and encouraged there, with singular advantages. At Racow, whither he arrived in 1612, he met with a considérable degree of patronage, joined the Unitarian church of that place, and determined to devote himself and his talents to the profeflion of the ministry. In the following year he was appointed Greek professor of the university; and in 1615 commenced the office of a public preacher with great acceptability. In the following feffion he was nominated recto- tor of the university, a poft which he filled with much ufefulness, and honour, for the space of five years, when he refigned his ministerial functions, and was fixed on as one of the flated pastors of the church at Racow. The duties of this office he performed with great affiduity; he zealously defended and illustrated the opinions which he had em-
CREMAUX, in Geography, a small town of France, in the department of the Loire in the district, and 6 miles south of Rouanne.

CREMB, a river of Carinthia, which runs into the Ljzer, about 6 miles N. of Millstatt.

CREMBSPERG, a town of Carinthia; 7 miles N. of Millstatt.

CREMERA, in Ancient Geography, a small river of Italy, in Etruria; it issues out of the lake of Baccano, and after a course of 3 miles, runs into the Tiber. It is at present called "La Verea," and is famous in ancient history for the Siprife and slaughter of the Fabii by the Vestal. According to Livy, (L. IV. c. 50.) and other Roman historians, the Fabii fell into an ambush, and were cut to pieces near this river; one alone of the whole family surviving, who, by reason of his tender years, had been left at Rome. He, it is said, was the grandfather of Fabius Maximus, of whom Ennius says,

"Unus qui nobis cunctando relictut rem."

Virgil, Æn. vi. 846.

"Whose wise delays retrived the Roman blade."

CREMIEU, in Latin Cremiaeum, in Geography, a small town of France, in the department of Isère, 18 miles E. of Lyons, at no very great distance from the Rhone. It is the chief place of a canton, in the district of La Tour du Pin, with a population of 2243 individuals. The canton itself has 29 communes, 13823 inhabitants, and a territorial extent of 5750 square kilometres. Near Cremieu is the famous grove of Notre Dame de la Balme.

CREMEN, an ancient but small town of Praffa, in the middle mark of Brandenburg, containing about 300 houses, and remarkable for two battles which were fought in its vicinity, between the sovereigns of Brandenburg and Pomerania; one lost by the Margrave, Lewis of Brandenburg, against the duke of Pomerania in 1331, and the other won again against another duke of Pomerania by the elector of Brandenburg in 1413.

CREMIN, a town of Ancient Geography, a town of Asia, in Phidias, according to Strabo and Ptolemy. Aliso, an episcopal town of Asia, in Pamphylia Secunda.

CREMEL, a town of Europe Sarmatia, near the Paus Mxotis and Tanaus, according to Herodotus, who says it was a commercial town. Ptolemy.

CREMINSOS, a town of Europe Sarmatia, placed by Ptolemy after they had crossed the river of the Dniester.

CREMINTZ, Kremitsa, in Geography, the principal mine town of Hungary, about 40 miles to the south of the Carpathian mountains, in a deep valley famous for the nine rich gold and silver mines, which are in its neighbourhood. It has a mint which used to coin one hundred thousand ducats annually; but at present, the mines yield the precious metals less abundantly.

Cremnitz it is an inconsiderable place; but the suburbs are large. It has three churches, an infirmary and a Franciscan convent. On a hill near the town is an old castle with a church.

In 1731, Cremnitz was honoured with the visit of the emperor Francis I., who, in the garb of a miner, went down a very deep shaft.

Both the mine and the town of Cremnitz suffered considerably during the disturbances raised by prince Rakotsy and count Telyky.

CREMONA, a town anciently of Gallia Transpadana, and now capital of the Cremonese, situated in a delightful plain, watered by the Oglio, about a quarter of a mile from the Po, over which is a bridge of boats, protected by a fort, as the town is by a canal: a canal, which passes through the town, forms a communication between the Oglio and the Po: its circumference is about 5 miles. The principal streets are wide and straight, adorned with some small squares, and a few palaces, but the houses in general are not well built. An university was founded in this city by the emperor Sigismund, but it has long been in a declining condition. Cremona has 40 parish churches, from the tower of one of which is an extensive view over the fertile plains of Austrian Lombardy. 43 convents, and about 12,000 inhabitants. This is the site of a bishopric, suffragan of Milan. This town is said to have been built 391 years B.C. When the country became subject to the Romans, they first a colony into this city in the year of Rome 575; and a second in 562. In the year of Antony and Augustus, it took part against the latter, who surrendered the town and the adjacent territory to the plunder of the folesiers. After having recovered its former flourishing state, it was burnt by the folesiers of Vepellant. It was again laid waste by the Goths A.D. 630. In 1796, it surrendered to the French without resistance.

CREMONA, STOP, on an organ, is a single reed flop, originally designed to imitate an ancient wind instrument, called a Krembron, (which see;) but time and the ignorance of organ-builders have corrupted this word into Cremona, which has led some of late to fuppose, that this stop was at first intended as an imitation of the violin. See Organ.

CREMONAGE, in Geography, a country of Italy in the Milanese, deriving its name from its capital, Cremona; bounded on the E. by the duchy of Mantua, on the N. by the Brenn, on the W. by the Lodofane and Cremacen, and on the S. by the Parmcen, from which it is separated by the Po. It belonged for a long time to Spain till the famous war for the succession of Charles II., when it was ceded to the house of Austria, and made a fief of the empire. It is a fertile country, particularly in wine and fruit.

CREMONEINI, Gio. Battista, in Biography, a painter, was a native of Cremona, and flourished at Bologna in the 16th century. He had sufficient knowledge of perspective and architectural decorations, and was much employed at Bologna in painting in fresco the facades of the palaces and houses of persons of distinction, which he ornamented with the imitations of statues, baso-reliefs, and frescoes, representing combats of wild beasts, &c., which he executed with great spirit. He had the honour of numbering Guercino amongst his disciples. Cremonini died in 1610. Lanzi. Orlandi.

CREMPE, or Crempe, in Geography, a town of Germany,
CRENELLE, in Heraldry. See Embattled.
CREN, in Ancient Geography, a place of Alia Minor, in Phrygia.
CREDINES, a maritime place of Alia Minor, in Byzantium, situated, according to Arrian, on the coast of the Euxine sea, between the port of Sandaraca and the town of Phylla.
CREN. the Lake of, in Geography, is a lake of considerable extent at the top of mount Rotondo, in Corfica, in the department of Golo, out of which issue the river Tovignan.
CRENOPHYLAC. The crenophylaceae at Athens were magnates who had the inspection and management of fountains under their care.
CREDIBA, in the Customs of the Middle Age, a robbery and murder committed in a wood, where the body of the person killed was burnt, in order to prevent any discovery of the crime. The word, says Wendelinus, is compounded of cruy and driven, that is, wood-robbers.
CROLE, a name given to the families descended from the Spaniards who first settled at Mexico in America. These constitute the second class of subjects in the Spanish colonies; and they are distinguished from the Chapetones, who are the first in rank and power; from the mixed race, forming the third class of citizens, and comprehending the Mulattoes and Mestizos; from the Negros, who hold the fourth rank; and from the Indians, who form the last and the most depressed order of men in the country, which belonged to their ancestors. The character and state of the Croles have enabled the Chapetones, or Spaniards arrived from Europe, to acquire various advantages, besides those which they derive from the partial favour of government. Although some of the Crolean race are descended from the conquerors of the New World, yet, others can trace up their pedigree to the noblest families in Spain; though many are puffed up with ample fortunes, yet by the enervating influence of a sultry climate, by the rigour of a jealous government, and by their despair of attaining that distinction to which mankind naturally aspire, the vigour of their minds is so entirely broken, that a great part of them waste their life in luxurious indulgences, mingled with an illiberal superciliousness still more debasing. Languid and unenterprising, the operations of an active extended commerce would be to them so cumberome and oppressive, that almost in every part of America they decline engaging in it. The interior traffic of every colony, as well as its trade with the neighbouring provinces, and with Spain itself, are carried on chiefly by the Chapetones; who, as the complements of their industry, amass immense wealth, while the Croles, sunk in sloth, are satisfied with the revenues of their paternal estates. From this dated competition for power and wealth between these two orders of citizens, and the various passions excited by a rivalry so interesting, their hatred is violent and implacable. The court of Spain, from a refinement of distrustful policy, enforces these seeds of discord, and fomenters this mutual jealousy, which not only prevents the two most powerful classes of its subjects in the New World from combining against the parent state, but prompts each, with the most vigilant zeal, to observe the motions, and to counteract the schemes of the other. To the Croles, or natives in the West Indies, says Mr. B. Edwards, we must look for the original and peculiar call of character impressed by the climate, if indeed the influence of climate be such as many writers imagine. (See CLIMATE.) This writer conceives that the climate of the West Indies displays itself more strongly on the persons of the natives, than on their manners, or on the faculties of their...
their minds. They are obviously, he says, a taller race, on the whole, than the Europeans, but, in general, not proportionably robust. Many of them are six feet four inches in height; but they want bulk, corresponding to our ideas of masculine beauty. All of them, however, are distinguished by the suppleness of their joints, which enable them to move with great ease and agility, as well as gracefulness, in dancing. They also excel in penmanship, and the use of the small sword. It has been truly observed, he says, that the effect of climate is likewise obvious in the structure of the eye, the socket being considerably deeper than among the natives of Europe. By this conformity, they are guarded from the injurious effects of an almost continual strong glare of sun-furture; he also remarks, that their skin feels much colder than that of an European, a circumstance which, as he conceives, proves, that nature has contrived some peculiar means of protecting them from the heat, which she has denied to the nations of temperate regions, as unnecessary. Accordingly, though their mode of living differ in no respect from that of the European residents, they are rarely obnoxious to those inflammatory disorders, which frequently prove fatal to the latter. The Creole women, by their similarly abdomenial diet, and the calm tenour of their lives, are peculiarly exempt from these disorders. Hence, however, their fibres are relaxed and their countenances wan. The Creole ladies, though destitute of that bloom which is more difirable in colder countries, surpass most others in their large, languishing, and expressive eyes; sometimes beaming with animation, and sometimes melting with tenderness; a pure index, says the writer now cited, to that native goodness of heart and gentleness of disposition for which they are eminently and deservedly applauded, and to which it is owing that no women on earth make better wives, or better mothers. The Creole ladies are also noted for very fine teeth, which preserve beautifully white by a constant use of the juice of a starchy called the "Chewflick," a species of rhizoma. This is cut into small pieces, and used as a tooth-brush. The juice is a strong biter, and a powerful detergent. The circumstance most observable in the character of the West Indian Creoles is an early display of the mental powers. Hence it has been said that as the genius of the young West Indians attains forecast to maturity, it declines more rapidly than that of Europeans. The chief cause, however, according to De Ulloa, of the short duration of such promising beginnings seems to be the want of proper objects for exercising the faculties. The propensity also, which the climate undoubtedly encourages, to early and habitual leisueness, induces a turn of mind unfriendly to mental improvement. Among such of the natives as have happily escaped the contagion and enervating effects of voluptuous excesses, men are found of capacities as strong and permanent as among any people whatever. Mr. Edwards cannot either admit that the Creoles in general possess lets capacity and stability of mind than the natives of Europe, or allow that they fall short of them in those qualities of the heart which render man a being to all around him. Generosity to each other, and a high degree of compassion and kindness towards their inferiors and dependents, filling the Creoles in a very honourable manner. To this purpose, Mr. Ramsay observes, in his "Effay on the Treatment and Conversion of the Slaves," &c. that adventurers from Europe are universally more cruel and morose towards the slaves than the Creoles or native West Indians. "If they are proud," says Mr. Edwards, "their pride is allied to no meanesses. Infrastracted from their infancy to entertain a very high opinion of their own conformance, they are cautious of doing any act which may lessin the confidence of their proper dignity. From the same cause they fear every species of concealment. They have a frankness of disposition beyond any people on earth. Their confidence is unlimited and entire. Superior to falsehood themselves, they suspect it not in others." Indolence, this writer allows, is too predominant among them; but timidity constitutes no part of their character; and even the indolence, of which they are accused, is rather an aversion from serious and deep reflection than a flagellums of nature. Both sexes, when the springs of the mind are set in motion, are remarkable for a warm imagination, and a high flow of spirits. Robertson's America, vol. iii. Edwards's West Indies, vol. ii. Voy. de Ulloa; and Voy. de Frezier.

CREON, in Ancient Geography, a mountain of the island of Lesbos.

CREON, in Geography, a small town of France, in the department of the Gironde, chief place of a canton in the district of Bordeaux. It has only 8,135, but the canton contains 13,594 inhabitants, dispered in 28 communes, upon a territorial extent of 109 kilometres and a half.

CREONES, in Ancient Geography, a people who, according to Ptolomy, inhabited the northern part of Britain, on the western coast, N. of the Cæron.

CREONIUM, an ancient town of Macedonia, near the Lychnus lake. Polybius.

CREOPHAGI, a people of Ethiopia, near Egypt, placed by Strabo above the part of Antiphile. Both men and women practised a kind of circumcision.

CREOPHYLUS, in Geography, an excellent poet of Samos, contemporary with Homer, who preferred him, as Strabo informs us, with a poem on the taking of the city Oechalia. This poem is also mentioned by Pausanius and Callimachus; but both these writers ascribe it to Creophylus, and not to Homer. Creophylus entertained Homer at his house, and is said by him to have been his master, and to have had great share in composing the divine work, as Creoer fylles it, which paffes under the same of that inimitable poet.

CREPANU, in the Menege, a chip in a horse's leg, made by the pangs of the fhoes of one of the hinder feet, crossing and striking against the other.

CREPIDE, among the Romans, a kind of flippers or shoes, which were always worn with the pallium, as the calcei were with the toga.


Gen. Ch. Calyx commum double; exterior one generally very short; scales generally spreading, deciduous; interior one egg-shaped, simple, tufted, permanent, often swelling in the middle as the seeds ripen; scales linear. Cor. uniform; florets in several ranks, all ligulate, hermaphrodite, five-toothed. Stam. Filaments five, exipitary, very short; anthers united in a hollow cylinder. Pif. Cerm somewhat egg-shaped, plane, filiform, in the length of the flaminus; fimbriae two, reflexed. Peric. none, except the permanent inner calyx. Seed solitary, oblong, tufted or columnar; down simple or feathery, soft or fleshy. Recp. roughish.

Eff. Ch. calyx encysted with deciduous scales. Florets in several ranks. Receptacle roughish.

pi"natisf, crenated; scapes few-flowered." Root perennial.

Stems fix or seven inches high, naked, or furnished only with a
few short laciniated leaves. \textit{Root-leaves} spread on the
ground, rehshing those of thaliphi barba palifoi, or com-
mon shepherd's-putis. \textit{Flowers} rather small, on slender ped-
duncles. A native of Italy and Sicily. 2. \textit{C. nanaemufisi}.
Wildl. 2. \textit{Gomarr, Illin. Co. Allion, Ped. 300. tab. 75.}

fig. 1. (Andryala nanaemufisi; Vill. Delph. 3. 66.
tab. 26.) "Leaves runcinate; obtuse, toothed; scape
many flowered, hispid; calyx-flesc membranous at the
edge." Root annual. Whole plant hispid. It has some
resemblance to \textit{Hieracium funclum} of Linnaeus, but we have
the authority of Dr. Smith for all time, that \textit{Willdenow}
is wrong in supposing it to be the same plant. A native of
the south of France, Italy, and Palestine. 3. \textit{C. leventdon-

"Leaves runcinate, toothed, smooth; scape many-flowered,
ascending; calyxes tomentos; outer feals a prifed cold to the
others." Root anamal. \textit{Sceptr} a foot high, smooth,
firmihed at the bafe of the ramifications with a brown-awl-
shaped bract. \textit{Leaf} acuminate, elapsed at the bafe and
on the lower part of the mid-rib. \textit{Dovia capitata}, flipple.
A native of Piedmont. 4. \textit{C. tarsaripHais.} Wildl. 4.
Desf. Atl. 2. 2. 33. "Leaves runcinate-pinnatifid, toothed,
hispid; feaas ascending, leafy at the bafe, many-flowered;
calyxes tomentos; outer feae spreading." Root binamal.

Stems one foot or two feet high, branched. \textit{Peduncles}
pubifcent;bracts generally two at the bafe of each peduncle;
inner feales of the calyx obo-acute; outer one ova-
lanceolate, membranous at the edges. \textit{Dovia capitata},
flipitate. A native of Barbary. 5. \textit{C. argyripHais.} Wildl. 5.
(Hieracium filipiftingum; Jacq. Atl. 3. tab. 53.) "Leaves
lanceolate-ohovate; toothed, fhouuid; ffilones-linear-
 lanceolate; item angular, feafous near the bottom; peduncles
and calyxes hispid." Root perennial. \textit{Stem} a foot or a
foot and half high, furrowed, hispid towards the top, fomtimes
leafless, two or three-flowered. \textit{Stem-leaves}, when present,
from one to three, fefil or fiewhat decurrent, nearly en-
tire at the bafe. \textit{Flowers} yellow; calyx fligbtly calyced,
blackish-green; inner feales lanceolate, smooth, hispid at the
bafe; outer ones few, awl-shaped, hispid; down capi-
flary, flipitate. A native of high meadows in 

\textit{Austria and 

Bavaria. 6. \textit{C. aefcias.} Linn. Sp. 5. Mart. 4. Lam. 3.
Wildl. 6. \textit{C. cichorlum funfulum veIudinum; Bauh. 

Pin. 126. Cichorium sylvestre; Col. Ephr. 1. 238.
tab. 257.} "Involucres eha-shaped, concave, obtuse, flpre-
ding." Linn. Sp. Pl. 1. "Involucres fcrifiform, the length of
the calyx; flowers in corymb; bracteae egg-shaped." Linn.
Syf. Nat. \textit{Root} annual, thick. \textit{Stem} a foot and half high,
flrated, fefilous in its lower part, branched into a panicle,
or corymb; longer branches two or three-flowered; the
others only one-flowered. \textit{Root-leaves} lyre-shaped, deeply
cut at the bafe, encharged upwards, entire and obtuse at the
summit, runcinate, slightly rough; \textit{stem-leaves} embracing the
item, acute, furhifhed with narrow teeth at the bafe.
\textit{Flowers} yellow, terminal; inner or proper calyx oval-coni-
cal, very hairy; feales of the outer calyx broad, concave,
feafous, having the appearance of an involucre with refpect
to the other, and at leat half its length; bracts at the di-
variations of the item, panicle or corymb exactly similar to
the feales of the outer calyx. \textit{C} differs only in having
rougher leaves. Dr. Smith, with his usual urbanity and
zeal for the promotion of science, has obligingly infor-
mated us, that the fpecimen in the Linnean Herbarium, from
which the description in Species Plantarum was formed, was
gathered by Hallequin in the East; and that there appears
no authority for its ever having been found in Switzerland,
and Linneus has flated, from a mischievous of \textit{C. Bairiun's}
\textit{Hieracium montanum rapidulum}, which Haller refers to \textit{C.}
\textit{bimatis. There is no fpecimen of \textit{C} in the Herbarium, and
it feems to have been taken up folely from Colomina. \n
Willdenow has confidered it as a distinct fpecies, and called it
\textit{fcarfa}; he has also added another, under the name of

\textit{taurinus}, giving as a fynonym, \textit{C. vellicaria}; Dal+s;

Taur. 93.; but Dr. Smith is inclined to think that he has
made three fpecies out of one. According to Willdenow,
fi there in having the bracteae and outer feales of the calyx,
not lanceolate and feafous, but fimpew-shaped, and only
membranous at the edges. Both the varieties are natives of

Wildl. 5. Gart. t. 158. tab. 8. Copied in Linn. Ilk.
Sp. 691. fig. 1.} (Hieracium alpium fceoronzon folio; 

Turn. 472. Leontodon; Gmel. Siber. 2. 16. tab. 5.)

"Leaves embracing the item, oblong, acuminate; lower
ones finely toothed above; upper one, below." Linn.
Syf. Pl. "Involucres leonfort, the length of the calyx; 

flowers foiitary." Linn. Syf. Nat. Some refembling the
preciding, but definit. \textit{Root} annual. \textit{Stem} about a
foot high, fhrped, leafy, with two or three fimple branches.
\textit{Root-leaves} long, fpatulate, toothed towards the fummit,
quite entire and narrowed towards the base; \textit{stem-leaves}
embracing the item, toothed towards the bafe. \textit{Flowers}
pale-yellow; inner calyx hairy; feales of the outer one
loose, smooth, according to Coflher's figure, not a quarter the
length of the other. \textit{Receptacle} concave, deeply fided;
edges of the cavities fhrved. \textit{Nid} very long, rugged, with
numerous fbrmous fhrs, club-shaped at the bafe, gradually
attenuated into a long point; down capillary, much shorter
than the feed. Obl. The down of this and some other
fpecies may be治理体系 fimplid-fipitate; it being difficult to
determine whether it be feated on a real fipe, or only on the
point of the lengthened fead. A native of \textit{Italy. 8. \textit{C. 

albuca.} Mart. 17. Lam. 5. Wildl. 10. Jacq. Ee. 

Rar. 1. tab. 164. Allion. Ped. 820. tab. 32. fig. 3. Vill.

Delph. 3. 159. tab. 33. "Leaves runcinate-toothed,
feafous hairy; peduncles naked, one-flowered; calyx-
feales whifh at the edges." Root perennial. \textit{Stems} feveral,
from twelve to fifteen inches high, cylindrical, pubifcent,
divided into two or three fimple branches, with a fheat at
each division. \textit{Root-leaves} oblong, runcinate, toothed.
enlarged towards the fummit, rather thick. clothed with short
hairs, wiffh; \textit{stem-leaves} half embracing or fefilous, fome-
times a little narrowed at their intection, acute, thinly and
feafously toothed. \textit{Flowers} pale-yellow, rather large;

peduncles or branches long, one-flowered; outer calyx-feales
oval, loafe; inner ones lanceolate, fhrved close to the fower.
A native of the south of France, and of \textit{Italy. 9. \textit{C. 

fanaata.} Lam. 6. "Leaves pinnate-finated, somewhat
feafous; peduncles naked, one-flowered; outer calyx-feales
widely spreading." Root perennial. \textit{Stem} a foot high or
more, furnished with two or fome fimple branches, leafy
only at the divisions and near the bafe. \textit{Root-leaves}

oblong; \textit{stem-leaves} shorter and more deeply cut. 

\textit{Flowers} pale-yellow, rather large; peduncles long, befted with fome fimpew-shaped feales, one-flowered; outer calyx-feales green, not fcarious. \textit{Seeds} oblong, feafous; down feaforous. A native of the north coaft of Africa, obferved by 

Deffontaine, who fed to \textit{Paris. 10. \textit{C. rigida.} 

tab. 19. "Leaves rigida, feafous, toothed; \textit{stem-
ones} inerfeely egg-shaped; \textit{stem-leaves} arrow-shaped,
embracing the item; flowers raceme-paneled; calyxes
\textit{V} y 2 pubefcent."
CREPIS.

few; down of the seed capillary, fleshy. A native of France and Italy, on walls, and by the sides of hedges. Nearly allied to C. murorum, but smaller in all its parts. 22. C. Dioecista. Linn. Sp. Pl. 8. Mart. 14. Willd. 28. (C. virescens; Lam.; Hieracium majus erectum anguillum, caulic levii; Bauh. Pin. 127.) "Root leaves reniform; stem-leaves hartate; felix corymbosa tomentosa." Lam. 2. Root-leaf sessile, lanceolate-runcinate; stem-leaves hartate, lancet-shaped; lower leaves toothed; stem erect; branches divergunt; inner calyx roundish egg-shaped, angular. Willd. 3. Root annual. Stem a foot high, somewhat angular, nearly ever-surfaced. Root-faces smooth, fleshy, hairy, slightly thickened at the base; calyxes involucriform; peduncles erect, hairy, slightly thickened at the base; the calyxes mostly, not nodding before the flower opens; calyx-segments hairy, closely thickened at the apex; leaves of the stem, purple beneath, always at the base thickly toothed. Flowers yellow, pubescent underneath; pedicels long, ascending, naked, one-flowered, finely thickened at the base; the calyxes somewhat fleshy. A native of France, Siberia, and the Patatini. Linn. doubt whether this and the preceding are specifically distinct; Vailant, Haller, Gowan, and Villars have actually united them. 24. C. agrostis. Willd. 23. Seeds, and示范基地. Flanger. "Root-leaves lanceolate-runcinate; stem-leaves lanceolate, toothed at the base, arrow-shaped; flowers corymb-pandicled; calyxes rough with hairs. Root annual. The wild plant is a foot and half high, and hispid; when cultivated it rises to the height of two feet, and becomes almost smooth. Flowers smaller than those of C. tectorum. A native of Hungary, on the borders of corn fields, and in dry meadows. 25. C. biennis. Linn. Sp. Pl. 14. Mart. 17. Lam. 17. Willd. 24. Hall. 32. Curt. tab. 158. fig. 2. Copied in Lam. Ill. Pl. 651. fig. 2. Lam. Bot. 149. (Hedypnum biennis; Huds. 332. Hieracium maximum, crepis folio, afperum; Bauh. Pin. 127. Tourn. 472. Rau. Syn. 166.) "Leaves reniform-pinnatifid, quadrangular, lobes furnished with teeth, pointing upwards; calyx bristle, somewhat tomentous." Root biennial. Pinnate-shaped. Stem three or four feet high, erect, angular, leafy, rough with bristles, branched in the upper part, often purplish below. Leaves rough with whitish bristles; root and lower stem-leaves petioled; upper stems lanceolate, pinnatifid at the base, embracing the stem; upper-leaves. Flowers large, yellow, in a kind of corymb; outer scales of the calyx-white, somewhat membranous at the edges, about half the length of the inner ones. Receptacle pitted; edges of the cavities inflated. Seeds obovate, bristle, smooth, more slender upwards, but not attenuated into a flake; down fleshy, capillary. A native of England, France, and other parts of Europe, chiefly in a chalky soil. 25. C. federa. Willd. 27. "Leaves reniform, hispid; stem-leaves fleshy; flowers in corymba; calyx tomentose; stem scales pressing close to the others." Stem a foot high, flattened, thinly clothed with very short hairs. Root-leaves two inches long, petioled, very rough with hairs, inversely egg-shaped; segments obtuse; somewhat tomento; stem-leaves less hispid; lowest segments a little elongated; bracted ones linear-awl-shaped, somewhat hairy at the base with linear auricles. Flowers yellow, about the size of those of C. tectorum, corimbous; peduncles white, with down; calyx downy, not bristly. A native of France. 27. C. macrophylla. Willd. 29. Desf. Atl. 2. 231. "Lower leaves ovate-oblong, hairy, unequally toothed; down fimbriate, capillary." Stem a foot and a half or two feet high, erect, fimbriated, branched, hairy, februous. Leaves cloathed with short hairs; lower ones fix or eight inches long; upper ones lanceolate, embracing the stem. Flowers numerous, yellow, the size of those of C. biennis, corimbous; outer calyx yellow; scales egg-shaped, smooth, membranous at the edges; inner one cylindrical; sepal linear, acute, nearly equal, hispitate with short hairs. Seed elongated, slender, smooth. A native of Barbary about Algiers. 28. C. pulchra. Linn. Sp. Pl. 11. Murt. 15. Kruk. Synes. tab. 37. (Chondrilla pulchra; Lam. Prenanthus hieracifolius; Willd. Chondrilla hieracii folio, annua; Tourn. 238.) "Leaves arrow-shaped, toothed, fleshy, pandicled; calyxes pyramidal, smooth. Root annual. Stem three feet high, furrowed, leafy, smooth. Leaves roughish; root-ones five or seven inches long, and two broad, somewhat lyre-shaped, narrow into a petiole; stem-leaves embracing the stem, arrow-shaped acute, toothed towards the base. Flowers small, yellow, peduncled, in a boss terminal panicule; outer calyx-segments very minute, close. Down of the seed capillary, fleshy. A native of France, Italy, and Sicily. 29. C. neglecta. Linn. Mant. 15. Mart. 15. (C. sapitula; Lam.?) "Leaves embracing the stem, reniform. Somewhat hairy; stem panicked; inner calyxes with one or two weak points on each scale." Stem a foot high, erect, somewhat hairy, branched. Root-leaves obovate-oblong, toothed, somewhat hairy; stem ones embracing the stem, reniform, somewhat hairy, with elongated teeth even at the base; upper ones somewhat hairy. Flowers small, yellow, peduncles or flowering branches elongated, naked, even-surfaced, two-flowered, or bifold; outer calyx-segments very short, acute, inner ones eight or ten. Root annual. A native of Italy. Dr. Smith assures us that Willdenow has no good authority for allering that, in the herbarium of Linnaeus, a specimen of C. neglecta is preserved under the name of C. neglecta. The latter is much more similar to hieracium fugum, which Willdenow erroneously makes a synonym of C. nematifolius, but is quite distinct from both. 30. C. segetum. Hort. Kew. 13. (C. coronopifolia; Willd. 32. Desf. Ac. for. hist. nat. par. 1. 38. tab. 9. Chondrilla hieracoides; Roth. Cat. 1. 101. Chondrilla trazopogonoides; Bosc. mus. tab. 13.) "Leaves pinnatifid, or toothed, somewhat fleshy; calyces a little tomento; down fleshy." Hort. Kew. 9. "Leaves pinnatifid, segments linear, stem-leaves toothed; stem-leaves fleshy; calyxes tomentous; scales of the outer ones pressed close to the others." Willd. Root annual. A native of Madeira and the Canary Islands. 31. C. tenuefolia. Willd. 31. "Leaves pinnatifid; leaflets fimbriate; root-ones toothed; fleshy panicked; calyxes pubescent; scales of the outer ones reflexed." A native of Tauria! 32. C. ptiliformis. Willd. 32. Hort. Kew. 3. 1:80. "Leaves linear-oblanceolate, quite smooth; down fleshy." Root biennial. A native of Madeira. Crocus barbarus. Linn. See Tolpis barbarus. Crepis pygmaea. Linn. See Hieracium pamillum. Crepis sublisa. Linn. See Hieracium subliris. Crepis, in Gardening, comprises plants of the herbaceous ornamental annual kind; of which the species mostly cultivated are; the Spanish bearded crepis, or purple eyed succory hawk-weed, (C. barbarus;) and the purple crepis, (C. rubra.)

Method of Culture.—These, like other annual plants of the hardy kinds, must be raised by sowing the seed in either the autumn or spring, or both periods, where they are required to flower for a long time of growth and in patches, in the clumps, borders, or other part where they are to remain, six or seven in each, covering them in lightly. When the plants have attained six or seven inches in growth, they should be thinned out, to three or four in each patch, and be kept free from weeds. They are capable of succeeding in most soils and situations.
tions, having a pleasing effect in their flowers, in the fronts and other parts of the borders and clumps of ornamented grounds, as well as in many other places.

CREPITATION, that noise which some faults make over the fire in calculation; called all's detonation.

Crepitation is also used in Surgery, for the noise made by the ends or pieces of bones, when the surgeon moves a limb to assure himself by his ear of the existence of a fracture.

This is one of the evident indications of a fracture of bones; and to judge by it with the greater ease to the patient, it is necessary that the upper part of the limb be held fast, while the lower part is gently moved. The jar of the bones will likewise be sometimes felt by the hand, when nothing is heard.

Crepitus Lunæ, in Natural History, a kind of fungus, popularly called puff-ball.

Mr Derham observes, that upon examining the powder thereof with a microscope, he found the seeds to be so many exceedingly small purplish balls, with round heads, and long, sharp-pointed stalks; as if made on purpose to prick into the ground.

The seeds become hurtful to the eyes, probably by their sharp stalks pricking and wounded them.

CREPUSCULUM, in Geography, a town of France, in the department of the Caulon, and district of Bayeux; 2 leagues N E. of Bayeux.

CREPUSCULA, in Ancient Geography, an island of the Adriatic sea, according to Ptolemy; called Creusa by Pliny; now Chepes.

CREPETSTINI, a people who inhabited the territory towards the mouths of the Rhine, according to the Ptolemaic table.

CREPUSCULIA, in Antiquity, tokens left with exposed children, by which they might be afterwards known. These were of considerable value, if the child happened to be newly born, in order to draw part of the expense of its education.

Crepusculia was also used, in a less proper fence, for the swaddling clothes in which children were exposed; because by them they might be known again. See EXPOSING OF CHILDREN.

CREPUSCULUM, in Astronomy, twilight; the time from the first dawn or apparent rise of the morning, to the rising of the sun; and again, between the setting of the sun, and the last remains of day.

Pappus defines the word from creperus; which, he says, anciently signified uncertain, doubtful, q. d. a dubious light. "Res dubia crepera vocantur," Confermos. (Vid. Volii Etymol.) It is called the twilight as being between or partaking of two lights, the light of the sun and that of the stars. (Skinner Etymol.) The beginning of morning twilight is commonly called the day-break, day-spring, or dawning of the day. The crepusculum is usually computed to begin and end when the sun is about eighteen degrees below the horizon; for then stars of the sixth magnitude disappear in the morning, and appear in the evening. It is of longer duration in the solstices than in the equinoxes, and longer in an oblique than in a right sphere.

The crepuscula are occasioned by the sun's rays refracted in our atmosphere, and reflected from the particles thereof to the eye. For suppose an observer in O on the surface of the earth, ODF (Plate V. Astronomy, fig. 38.) BOA the sunset horizon, meeting in A the lemniscate GAHI bounding that part of the atmosphere which is capable of refracting and reflecting light to the eye, and the sun under the horizon at S; and let the ray SE fall in the atmosphere below the horizon at E. Since it falls out of a rarer into a denser medium, it will be refracted towards the perpendicular, i. e. towards the semidiameter CE. It will not therefore proceed to T, but touching the earth in D, it will fall upon A, the eastern part of the sensible horizon; nor can any other ray bisect AE, of all those refracted in E, arrive at A. But, since the parts AIE of the atmosphere reflect the sun's rays; and since the angle DAC is equal to CAO, i. e. the angle of incidence equal to the angle of reflection, the rays reflected in A will be transmitted to O, the place of the spectator; who will therefore see the particle A shining in the sensible horizon, and consequently the beginning of the morning twilight.

In the same manner might be shown the refraction and reflection of the sun's rays in the atmosphere, in the evening twilight. The ray SE will be the first that reaches the eye in the morning, when the dawning begins, and the last that falls upon the eye at night, when the twilight ends; for when the sun is farther below the horizon the particles at A can be no longer illuminated. When the sun is not more than about 9° below our rational horizon, his rays in the morning first reach the eastern parts of the air within our sensible horizon; as the time of its rising approaches, his light spreads farther round, and enlightens a larger portion of our air, and it becomes lighter and lighter, till a certain; in the same manner, after sun-set, the light gradually decreases, till the sun has descended to that low that none of his rays can reach the western parts of the air within our sensible horizon, or not in sufficient quantity to cause any sensible light there; and then the evening twilight ends: this happens when the sun's depression below the rational horizon is about 18°.

Kepler, indeed, assigns another cause of the crepusculum; viz. the luminous matter or atmosphere around the sun; which, arising near the horizon in a circular figure, exhibits the crepusculum; but it is in no respect, as he conceives, owing to the refraction of the atmosphere. The sun's luminous atmosphere, however, though neither the sole nor principal cause of twilight, may lengthen its duration, by illuminating our air, when the sun is too low to reach it with his own light. Greg. All. book ii. prop. 8.

The depth of the sun below the horizon at the beginning of the morning, or the end of the evening crepusculum, is determined in the same manner as the arch of vision; viz. by observing the moment wherein the air first begins to shine in the morning, and that wherein it ceases to shine in the evening; then finding the sun's place for that moment; and thence the time till his rising in the horizon, or from his setting in the evening.

Alhazen found it 19°; Tycho, 17°; Rothmannus, 24°; Stevinus, 16°; Cassini, 15°; Riccioli, in the equinox in the morning 16°, in the evening 20° 30'; in the former solstice in the morning 21° 25'; in the winter solstice in the morning 17° 25'°

Nor need we wonder at this difference among astronomers; the cause of the crepusculum being inconstant: for, if the exhalations in the atmosphere be either more copious, or higher, than ordinary; the morning crepusculum will begin sooner, and the evening hold longer than ordinary: for the more copious the exhalations are, the more rays will they reflect, consequently the more will they shine; and the higher they are, the sooner they will be illuminated by
CREPUSCULUM.

By the sun. On this account, the evening twilight is longer than the morning, at the same time of the year in the same place. To this it may be added, that in a denier air, the refraction is greater; and that not only the brightness of the atmosphere is variable, but also its height from the earth; and therefore the twilight is longer in hot weather than in cold, in summer than in winter, and also in hot countries than in cold; other circumstances being the same. But the principal differences are owing to the different situations of places upon the earth, or to the difference of the sun’s place in the heavens. Thus, the twilight is longest in a parallel sphere, and shorted in a right sphere, and longer to places in an oblique sphere in proportion to their nearest to one of the poles; a circumstance which affords relief to the inhabitants of the more northern countries in their long winter nights. And the twilights are longest in all places which have north latitude, when the sun is in the tropic of Cancer; and to those in south latitude, when he is in the tropic of Capricorn. The time of the shorftest twilight is different in different latitudes; in England, it is about the beginning of October and of March, when the sun is in the signs $\Phi$ and $\Xi$. Hence, when the difference between the sun’s declination and the depth of the equator is less than $18^\circ$, so that the sun does not descend more than $18^\circ$ below the horizon; the crepusculum will continue the whole night; which is the case in England from about the 22d of May to the 21st of July.

PROB. I. Given the sun’s declination, e. g. $10^\circ$ N, and the latitude of the place, e. g. London, $51^\circ.33’$ N, to find daytime, or the beginning of the twilight in the morning, and the end of twilight in the evening. In the oblique-angled spherical triangle, $\odot Z$ $\odot$ $\odot$ $\odot$ (Plate V. APhronomy, fig. 39) let $\odot N=80^\circ$, the sun’s distance from the north pole, $\odot Z=108^\circ$, the sun’s distance from the zenith $=18^\circ+90^\circ$; $\odot N=38^\circ.28^\prime$, the complement of the latitude to find the angle Zenith $\odot$ $\odot$ $\odot$ N an $\odot$ $\odot$ $\odot$ $\odot$ $\odot$ $\odot$ measured by the arc $a \odot \odot$ the time from noon. The solution of the problem by spherical trigonometry, will be as follows.

\[
\begin{align*}
\odot N &= 80^\circ \\
\odot Z &= 108^\circ \\
ZN &= 38.28' \\
\text{Sine} &= 55.43' \\
\text{Sine} &= 0.9065' \\
2 &= 225.28' \\
\text{Half sum} &= 11.14' \\
\odot Z &= 108.6' \\
\text{Cosine} &= 68.47'.29'' \\
\text{Sine} &= 9.63.37' \\
\text{Sine} &= 66.6.28'' \\
\text{Remainder} &= 5.28'' \\
\end{align*}
\]

Angle $\odot N \odot Z = 136.34'.58'' = 9^\circ.6.28''$, time from noon when the sun is $18^\circ$ degrees below the horizon. Consequently the day breaks at $2^1.53'.49''$ in the morning, and twilight ends at $9^\circ.6.28''$ in the evening, supposing the sun’s declination to undergo no change between the beginning of twilight in the morning, and the ending thereof at night, being about 18 hours.

The same things might have been found from the triangle $\odot S \odot N \odot d$ for $\odot S =90^\circ+10^\circ=100^\circ$, for $\odot N =185^\circ-108^\circ =77^\circ$, and $\odot S = \odot S$ $\odot N$. Then by the method above find the angle $\odot S N$ (measured by the arch $\odot A \odot Q$) $=15.25'.12''=8^\circ.2.40''$ as before, the time from midnight, when the sun is $18^\circ$ below the horizon.

Supposing that the sun’s declination were $10^\circ S$ and the place the same, we shall have in the triangle $\odot S \odot N \odot d$ the sun being on the south side of $\odot \odot \odot$. Then $\odot S =90^\circ-10^\circ=80^\circ$, the sun’s diff. from the south pole, $\odot N \odot d=180^\circ-105^\circ=75^\circ$, the sun’s diff. from the sun’s place in the heavens.

\[
\begin{align*}
\text{Co-feec. } \odot S &= 80^\circ \\
\text{Co-feec. } \odot N &= 108^\circ \\
\text{Cosine} &= 38.28' \\
\text{Sine} &= 0.9065' \\
2 &= 225.28' \\
\text{Half sum} &= 11.14' \\
\odot Z &= 108.6' \\
\text{Cosine} &= 68.47'.29'' \\
\text{Sine} &= 9.63.37' \\
\text{Sine} &= 66.6.28'' \\
\text{Remainder} &= 5.28'' \\
\end{align*}
\]

Angle $\odot N \odot Z = 136.34'.58'' = 9^\circ.6.28''$, the time from midnight when the sun is $18^\circ$ below the horizon. Consequently day breaks at $4^1.54'.25''$ in the morning, and twilight ends at $9^\circ.5.28''$ in the evening. Admitting the sun’s declination constant for 1 day.

Again, if the sun’s declination were $23^\circ.23'$ $S$, and the latitude of the place the same, we shall have in the triangle $\odot S \odot N$, the sun being, as before, on the south side of $\odot \odot \odot Q$.

\[
\begin{align*}
\odot S &= 90^\circ-23.28'=66.24'' \\
\odot N &= 180^\circ-105^\circ=75^\circ \\
\end{align*}
\]

The time from midnight when the sun is $18^\circ$ below the horizon. Consequently day breaks at $4^1.54'.25''$ in the morning, and twilight ends at $9^\circ.5.28''$ on the shortest day at London.

When the declination of the sun, the latitude and declination of the same name, is greater than the difference between the complement of latitude and $18^\circ$, the parallel of declination (SS $\odot S$) will not cut the parallel of $18^\circ$ (TEW $\odot W$) below the horizon; consequently there will be no real night at these times, but constant day or twilight, as is the case London from the 22d of May to the 21st of July.

Since the sun sets more obliquely at some times of the year than at others, it necessarily follows that he will be longer in descending $18^\circ$ below the horizon at one season than another.

When the sun is on the same side of the equator as the visible pole, the duration of twilight will constantly increase as he approaches that pole, till he enters the tropic, at which time the duration of twilight will be the longest. It will then decrease till some time after the sun reaches the equinox, but will increase again before he arrives at the other tropic; therefore, there must be a point between the tropics, where the duration of twilight is the shortest.

PROB.
Prob. II. To find the Sun's declination at the time of the twilight. Let ab (fig. 40.) be the parallel of the Sun's declination at the time required; draw cd indefinitely north and parallel to it, and TW, a parallel to the horizon, 18° below it; then as PW, &c. measure the twilight on each parallel of declination and when the twilight is shortest, the increment of the hour angle being 90°, these must be equal; hence, \( \varphi r = \varphi e \); and therefore \( \varphi r = \varphi e \); and as \( r = \varphi e \), and the angles \( e \) and \( r \) are right angles, \( \varphi r = \varphi e \); but \( P \varphi r = \varphi Z \varphi z \), and taking \( Z \varphi r \) from each, \( P \varphi Z \varphi Z = \varphi r \varphi e \); for the same reason, \( P \varphi Z = \varphi W = \varphi z \); therefore \( P \varphi Z \varphi z \varphi w \). Take \( r = \varphi e \); then \( P \varphi r = P \varphi z \); and the angle \( P \varphi r \varphi z \varphi w \); let fall the perpendicular \( P \varphi y \), and it will bisect the base \( e Z \). Then, by trigonometry, \( \tan \alpha = \frac{e}{\varphi e} \), also, \( \tan \beta = \frac{e}{\varphi e} \)

For the declination, \( \tan \alpha = \frac{e}{\varphi e} \), therefore \( Z \varphi e = \varphi e \), measuring the twilight. Now \( e \) on \( P \varphi Z \), or \( \cos \varphi e \) : \( \sin \varphi e \) = \( \tan \varphi e \); hence \( \tan \varphi e = \tan \varphi e \); therefore \( \varphi e \) is always less than \( 90° \), and \( Z \varphi e \) is always less than \( 90° \), and therefore its cosine is positive: also \( \varphi e \) is always greater than \( 90° \), therefore its cosine is negative: hence \( \cos \varphi e = \cos \varphi e \).

Sine of 3° 45', 9°.

This declination of the Sun gives the time March 28 and of October 11th; between which days the twilight increases, and from the latter to the former, decreases. For the duration of twilight:

<table>
<thead>
<tr>
<th>Rad.</th>
<th>0:00:00:00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sin. 51° 32'</td>
<td>9.8037452</td>
</tr>
<tr>
<td>Tan. 9° 6'</td>
<td>9.196715</td>
</tr>
<tr>
<td>Sine of 7° 25'</td>
<td>9.003477</td>
</tr>
</tbody>
</table>

This duration of 9° 25', 9° 25', which converted into time, gives 1° 56° 32' for the duration of the twilight. Supposing it to end when the Sun is 18° below the horizon. It may be also found by taking the difference between the time of sunset and day-break, ascertained for the given declination.

Prob. III. To find the Sun's declination, when it is just twilight all night. In this case, the Sun at a (fig. 41) must be 18° below the horizon; hence 18° + the declination \( \varphi r = \varphi e \). The declination of the Sun is \( \varphi e \); hence the Sun's declination is \( \varphi e \) = \( \varphi e \). Find therefore in the "Nautical Almanac," or any good Ephemeris, on what days the Sun has this declination, and you have the time required. The Sun's greatest declination being 28° 28', it follows, if the Sun's declination at the time required is less than 28° 28', and if the Sun's declination at the time required is greater than 28° 28', it may be never be twilight all night. If the Sun be on the other side of the equator, then its declination is 18°—comp. lat. "Gregory's Alman." b. ii. pr. 41. "Vince's Almanac," vol. i. p. 18. 19. "Robertson's Nav." b. v. pr. 12. "Keith's Trigonometry," b. v. iii. ch. 2.

To find the beginning and end of twilight at the artificial globe. Rectify the globe for the latitude of the place, bring the Sun's place on the given day to the meridian; let the hour-index at 13, then turn the globe towards the east till the point of the ecliptic opposite to the Sun's place is 18° above the west side of the horizon; the Sun's place is then 15° below the east side, and the morning twilight begins, the index pointing at the hour. By a similar method the time of the ending of the evening twilight is found by turning the globe till the point of the ecliptic opposite to the Sun's place on the given day be 18° above the east side of the horizon; the Sun's place will then be 18° below the west side of the horizon, when the evening twilight ends, the hour-index showing the time.

Supposing the depression of the Sun, at which twilight begins or ends to be 18°, it is easy to determine the height of the atmosphere. Let A E F G (Plate V. Almanac, fig. 42.) be the earth, the pointed circle surrounding it the outward surface of the atmosphere, the height of which D B is to be found; let A be the place of an observer, B his sensible horizon; H O his rational horizon; let I K L M be the Sun, and E N G the shadow of the earth, I B a ray from the upper edge of the Sun, touching the earth in E, and falling upon the outer surface of the atmosphere at B, whence it is reflected to the eye of the observer at A in the line of his sensible horizon B A; since the Sun is larger than the earth, he enlightens a little more than a hemisphere, or that part represented by the arc E F G = 180° 32', because, E C + E C N = two right angles, and E C N is less than a right angle by the angle E N C = 16°; consequently, the half of E F G or the angle E C S = 90° 16°; and therefore taking away O C S, the Sun's depression = 18°, there will remain E C O = 72° 16°; and as A C O = 90°, A C E = 17° 44°, and D C A, its half = 8° 52°. Then in the right-angled triangle B A C, the angles, and one side A C are known, therefore the side B C may be found. A C being made radius, B C will be the secant of the angle B C A = 58° 52': therefore 109000000 = 10120918 = 3567 1/2, the miles in the earth's semidiameter; 4015 1/2 the distance from the center to the outward surface of the atmosphere, from which subtract the semidiameter, and the remainder, 48 miles, will be the height of the atmosphere. If allowance of 34° for the horizontal refraction, the angle B C A = 8° 15', the secant of which is 10125857, whence the height of the atmosphere will be about 42 miles. "Long's Alm." vol. i. p. 250. See Atmosphere.
C E R

Pope Paul V. made him superintendent of the works then
constructing in Rome. Crecenci afterwards went to Spain,
where he was employed in forwarding the works of the
Escurial; besides which he built the tomb of Philip III.
He is said to have painted flowers with considerable ability.
He died at Madrid in 1662. 
Luizi.

CRESCENDO, Ital., from cresere, to increase, a
term in Music, unknown till about the middle of the last
century. We had long before that time piano and forte,
with their several shades of piano piano, and pianifimo, piano
forte and fortefimo (which fec) but it seems as if, as someone,
who had a good band to write for at Stuttgard, introduced
the terms cresendo and diminuendo into Germany, for the
gradual increase and diminution of sound; and they were
soon adopted by the symphonists of the Mannheim school,
such as the elder Hamitz, Holtzhammer, Canabich, Teofchi,
Funtz, Filtz, &c. who tried experiments on the symphonies
of the orchestra in the aggregate,

and succeeded so well as to establish the practice through¬
out Europe.

The first time we recollect hearing it in England was in
an air by J. Chr. Bach, composed for the celebrated tenor,
Raa', to sing at Mannheim; but long after by Ciprandi, an
excellent tenor. The words were Metaftallo's in Ezio:
" Non fo donde vieni quel tengo affetto." This is the his¬
tory of cresendo and diminuendo, which have introduced as
much chiar ofuro in music as painting could boast.
A keyed instrument, but above all an organ, by which the
cresendo could be obtained, is a grand deciftrum in music.
Gray has in some degree acquired this power, by a swell of
the whole instrument.

CRESCENT, formed from cresce, I grow, in Astronomy,
the new moon, which, as it begins to recede from the sun, threw
a little rim of light, terminating in points, or horns, which
are still increafing, till it becomes full and round in the op¬
polition.

The term is also used for the fame figure of the moon in
its wane, or decreafe, but improperly; because the points
or horns are then turned towards the west, whereas they look
to the eait in the juft crefcent, and because the figure is on
the decreafe.

CRESCENT, in Geography, an island of the South Sea, so
called on account of its form, 6 or 7 miles in circumference,
and lying in 8. lat. 23° 22'. E. long. 225° 50'. The shore
of this island is grey coral land and flones, thrown up by
the violence of the sea, forming a wall at the S.E. point,
about 15 or 30 feet above the flurfes: and this point
were three piles of coral flones, two of which were built
round and small, and one square, the fides of which might
be about 12 feet and 6 in height, with a hole at one fide,
seemingly for the convenience of creeping into the hovel.
The natives feen by the millionary voyagers were 25, includ¬
ing three or four women carrying children on their backs;
and there were probably all that inhabited the island. They
are of a light copper colour and middling stature. The ac¬
cent of their language is fimilar to that of the other iflanders
with whom these voyagers were acquainted. Some were
quite naked, except a piece of cloth round their middle;
others had a long piece of cloth thrown over their shoulders,
and reaching half way down the leg: one, who was perhaps
the chief, wore a piece of very white cloth round his head,
in form of a turban. They did not fec to have any orna¬
ments. It was difficult to imagine what they habited, as
they had neither bread-fruit, coconuts, nor any fruit.

Vol. X.
trees whatever; nor on the whole island could one cane for
fish be perceived; so that they must be either transient vi¬
stores, or, if permanent settlers, miserably provided with

CRESCENT, in Heraldry, is a bearing in form of a half¬
moon. The Ottomans bear finople, a crescent montant,
argent.

The crescent is frequently used as a difference in coat¬
 armour, to distinguish it for that of a second brother, or
junor family.

The figure of the crescent is the Turkish symbol; or ra¬
ther, is that of the city Byzantium, which bore this device
from all antiquity; as appears from medals struck in honour
of Augustus, Trajan, &c.

When the Tartars, to whom Muscovy was subject 200
years, converted any of the churches into mosques for the
use of their own religion, they fixed the crescent, the badge
of Mahometanism, upon them; and when the grand duke
Ivan Bafiovitich had delivered his country from the Tartar
yoke, and restored these edifices to the Christian worship,
he left the crescent remaining, and planted a cres upon it
as a mark of its victory over its enemy. See King's Rites
and Ceremonies of the Greek Church, p. 23.

The crescent is sometimes montant, i. e. its points look
toward the top of the chief, which is its most ordinary re¬
presentation; whence some contend, that the crescent, ab¬
olutely so called, implies that situation; though other
authors blazon it montant, when the horns are toward the
dexter side of the escutcheon, in which position others call
it inverfif.

Crescents are said to be adoffed, when their backs or
thickest parts are turned toward each other; their points
looking to the sides of the shield.

Crescent inverted, is that whose points look toward the
bottom; turned crescents are placed like those adoffed; the
difference is, that all their points look to the dexter side of
the shield; centurmed crescents, on the contrary, look to the
finiferfide; affronted or appointed crescents are contrary to
these, the points looking toward each other.

Crescent is also the name of a military order, instituted
by Charles I. king of Naples and Sicily, in 1626, who gave
the knights a collar of fleurs-de-lis, and flars intermixed,
and pendent to it a crescent with this motto, "Donee im¬
pleat orbem." The order was revived by Renatus of Anjou,
&c. in 1404: the badge, or symbol thereof being a crescent
of gold enamelled; on which was engraved, los, prafie:
which, in the style of rebus, makes los in crescent, q. d. by
advancing in virtue, one merits prafe.

Crescent, in Military Language, an order of battle
among the Turks, in which they encamp as well as engage;
similar to which was that called by Frontinius, "luna-te se-," in
which a general keeps back his centre, in order to advance
his two wings: an example of which occurs in the battle
between P. Scipio Africanus and Aemus. In this order
it appears to have been the aim of a general to avoid engag¬
ing in the centre, either because he had weakened it with
a view of strengthenings his wings, or because he had disco¬
ered that the enemy intended to open the action by attack¬
ing it. The Turks, in their crescent, propofe to surround
the enemy with their wings; but, at the fame time, they
wish to draw him to their centre, where they always place
fuch of their troops as warrant their chief confidence. M.
de Manzeroy observes, that the order of the crescent is fit
for none but the large armies of rich and populous states;
the object of it being to bring a great number of troops to
bear against a small one, surround them, and then, as it
were, trample them under foot. See Turks. The Moors
also, whose armies are very numerous, and confift chiefly of
2 cavalry,
 cavalry, draw them up on the same principles with the
Turks, and, like them, use the crescent. Of this we have
a remarkable instance in the battle of Alcázar, between the
Portuguese and the Moors, in which Don Sebastião, king of
Portugal, perished with his whole army. The Moorish
king, Muley-Mohne, though in a dying state, drew up his
troops by his own special orders, and expecting to expire in
battle, gave strict command that his death should be con-
cel ed, and that his sick-de-camp should ride up close to his
litter, and appear to be receiving his orders as usual. He
was then carried through all the ranks of his army, where,
in his presence and the face of them, he inspired his soldiers with a generous
resolution to fight bravely for the defence of their country and religion. The Portuguese,
unapprehensive of any extraordinary art or design in the disposi-
tion of the Moorish troops, advanced directly into the
hollow of the crescent; and Muley-Mohne allowed them to approach,
till he saw them near enough to be surrounded: he then
gave a signal, upon which all the files of cavalry, pressed on
his wings and in his rear, extended themselves, and formed
an oval, in which they entirely pent up the Christian army.
As soon as the two extremities of the crescent were thus
joined, the Moors closed in, and contracted the circum-
ference of their oval, according to a manoeuvre to which
they were accustomed; and at the same time their artillery
began to do its duty. After a very fierce engagement,
in which great bravery was manifested on both sides, the Moors
obtained a complete victory. See Naizery's System of
Tactics by Manie, vol. ii.

Crescent-Shaped, lunatum, or more properly lunulatum
folium, in Botany, is applied to that very unusual form of a
leaf which resembles a half-moon, whether the points of a
horn be directed forwards, from the foot-flalk, as in Pali-
flora lunata, or backwards, towards that part, like some
leaves of Sagittaria obtusifolia, and the lesslets, occasionally,
of Gymnula Lunaria, or moonwort, a fern so denominated
Stem, which is however very light and un-
certain. S.

CRESCENTIA, (from Pietro Crecefettio, an Italian
writer on agriculture towards the end of the thirteenth cen-
Jull. 127. Vent. 2. 378. Calebah tree. Calebfier,
Conis; Fr. Clais and order, dithymenia angustifolius. Nat.
Ord. Putaminus & Linn. Solanis afinis, Jull.
Gen. Ch. Col. Perianth one leaved, two-parted, short,
deciduous; corolla five-lobed, oval, obtuse, unequal.
Cor.
monopetalous, somewhat campanulate, irregular; tube short,
upright on one side, curved or somewhat twisted; border
five-cleft; divisions unequal, toothed, undulate. Stam-
enum five-parted, (sometimes five; Jacq.) the length of
the corolla, two shorter than the others, a little curved;
akthers incumbent, oblong, obtuse. Pyl. Germ superior, egg-
shaped, pedicelled; fyle long; stigma thick, capitate.
Peric. Berry large, oval, hard, one-celled. Seeds numerous,
two-celled, bised in the pulp.

Berry one-celled, pedicelled. Seeds numerous, two-celled.
Wild. 1. "Leaves wedge-lanceolate; fruit obtuse; seeds
heart-shaped." 2. Cucubitifera arbor, folio longo micru-
137. tab. 71. Jacq. Amer. 175. tab. 111. A tree about
the height of our poplar-tree, and nearly as thick as the hu-
man body. Trump crooked, dividing at the top into nu-
merous, very long, thick, nearly simple, almost horizontal
branches. Leaves falcifer, nine or ten together at irre-
gular distances, from five to seven inches long, about an inch
broad, narrowing very gradually towards the base, almost
separate, terminating in a long point, entire, smooth, rather
shiny. Flowers on the trunk and branches, pale white,
solitary, of a disagreeable smell; peduncles thick, an inch
long. Fruit varying in size and figure on different trees,
roundish, from two to three inches in diameter, without a
point or nipple at the summit, covered with a thin greenish-
yellow skin, which encloses a thin, hard, almost woody shell,
containing a pale yellow, soft, juicy pulp, of an unpleasant
taste. The shell, stripped of the external skin, and emptied
of its juice, is used in the West Indies, according to its size,
for various kinds of domestic vessels, such as water-cans,
goblets, coffee-cups, and, it is said, even for kettles to boil
water in; it being so thin, hard, and clofe-grained, as to
flam the fire several successive times before it is destroyed.
In the Carolinas and Georgia, there is a vessel of water fit
in a cool part of every house, with a calabash, prepared for
the purpose, swimming in it, for the family to drink out of,
as often as they think fit. Its external surface is sometimes
finely polished, and ornamented with engraved figures, which
are variously coloured with indigo, and other pigments.
The pulp is esteemed by the natives a sovereign remedy
in several disorders: taken internally, it is supposed to cure
dropsy, diarrhœa, and inflammations of the chell; applied
externally, it is thought serviceable in bruises, burns, and
headaches. A native of the West Indies, New Spain, and
Guiana. 2. Cucubitifera arbore, foliis foliis coniferis.
Leaves shorter than those of the preceding variety,
completely wedge-shaped, ending in a very short obtuse point,
separate, falcifer. Fruit often larger than the human head.
A native of the same countries. 3. Cujeta hueia fructu
duro; Plum. Gen. 23. A middle-sized shrub, with fuff
and widely spreading branches. Leaves constantly falcifer,
linear-lanceolate, of unequal size, some in the same falcifer
being scarcely half an inch long, and others an inch and half,
not acuminate. Fruit resembling those of the preceding
varieties, but scarcely larger than a pigeon's egg. A na-
tive of St. Domingo. According to Du Tour in Nouveau
Dictionaire, it is properly a distinct species. 2. C. cu-
jetia. Linn. Mant. 230. Mart. 2. Wild. 2. (C. cu-
jetia f.; Lam. Sp. Pl. C. latitola; Mill. Lam. 2. II.
Pl. 547.) but not the fiction of the fruit f, nor the separate
feed f, which belong to Cujeta. Cujeta latitola, f; the
putamine fragilis; Plum. Gen. 23. Burn. Amer. tab. 103.
Leaves egg-shaped, petiolated, alternate; fruit egg-shaped,
acuminate; seeds orbicular, compressel." A middle-sized
tree, with a large umbrageous head, nearly upright branches,
and a trunk considerably thicker than the human body.
Leaves about six inches long and three broad, not falcifer,
entire, quite smooth, shining, ending in a short point, on
short petioles. Flowers whiter than those of the preceding
species. Fruit nearly the shape of a citron, but larger, with
a thin brittle shell and whitish pulp. Seeds brown, two-
lobed, bitter. A native of St. Domingo. 5. C. jafmi-
noides. Lam. 3. (Arbor jasmini floribus albis; Catec.
Car. 1. 59.) "Leaves wedge-shaped, obtuse, emarginate;
flowers funnel-shaped; border equal, five-cleft." 3. A shrub,
fix or seven feet high, with a stem not thicker than the hu-
man finger. Leaves nearly the size of those of the common
laurel, coriaceous, fuff, a little folded back at the edges.
Flowers in terminal branches, resembling those of the
common jasmine, white, with a mixture of red. Fruit yellowish-
green, oval, obtuse, peduncled, about the confidence of a
loaf pear, and containing a pulp not unlike cassia in taste.
and colour. Such blackish, small, oval or rhomboid. A native of the Bahamas Islands. La Maree and Julifac have both expressed a doubt, whether this plant be really a crecuen-
tia; and Ducour is of opinion that it ought to be referred
another genus.

Propagation and Culture.—The calabash tree, being a
tropical plant, must be raised and constantly kept in
the house. It is easily raised from seed brought over in the ripe
fruit. In winter it should be placed in the tan-bed, and
should have but little water; in summer it requires to be
watered two or three times a week, and in hot weather
should have a good deal of fresh air. The first two species
have been long cultivated in England, but, we believe, have
never yet flowered.

Crescentia, in Gardening, comprises a plant of the
exotic tree kind, the narrow-leaved calabash tree (C. cu-
jute). There is also a broad-leaved variety, which may like-
wise be cultivated.

Method of Culture.—This species and variety of the cala-
bash tree are capable of being increased by fowing the seeds,
procured from the places of their native growth, as soon as
they are obtained, in pots of light, fresh, rich earth, plung-
ing them into a bare hot-bed. When the plants have at-
tained two or three inches in growth, they should be re-
moved into separate pots of a small size, replanting them in the hot-bed. They should be kept in the hot-bed of the
house, and have the management of other tender plants of
similar growth. In this climate these plants have only a
shrubby growth, being chiefly introduced for the purpose of
varieties among roof-plants.

Crescentino, in Geography, a small town in France,
in the department of Seine, which was formerly a part of
Piedmont in Italy. It is the chief place of a canton, in the
district of Saintia, with a population of 2089 persons. The
canton itself has but 5 communes, and 875 inhabitants.
Crescentino is situated on the river Po, 24 miles N.E. of Turin.

Crescenzzi, Del Bartolommeo, in Biography, so
called from his patron mentioned in a former article.
His true name was Camerazzi, and he was born in Viterbo.
Bartolommeo was one of the best scholars of Pome-
rano, whose style he studied with great success. His best
works are at Viterbo, where his cabinet pictures are much
esteemed. He died young, in 1635. Baglione.

Cresilla, a fair Grecian, who chiselled seven flas-
tues of Amazons for the temple of Diana at Ephesus. She
was accounted the third in merit among the numerous
competitors who vied in decorating that famed edifice, being
only inferior to Policleitus and Phidias. Borghini.

Cresius Mons, in Ancient Geography, a mountain of
Arcadia, N.E. of Megalopolis, and near Tegaa, upon
which was a temple of Mars, mentioned by Pausanias.

Crespi, Benedetto, called II Baffini, in Biographia,
a painter who flourished in the 17th century. He was a
native of Como, and is said to have posseffed no mean abil-
ities. He had a son, named Antonio Maria, to whom he
taught the principles of his art. Orlandi.

Crespi, Gio. Batista, an artist of considerable repu-
tation, called II Corneo from the place of his birth, a small town
near Novara, in the state of Milan. Crespi was born in the
year 1557, and at an early age was taught the art of design.
His parents sent him to Rome, and afterwards to Venice;
and both which places he flaid some time to study the com-
positions of the most eminent masters. Upon his return, he
established himself at Milan, where he acquired the favour
of the reigning duke. This prince conferred on our artist a
pension and many honours, which were continued to him
until the year of his death, 1633.

Gio. Battista Crespi was a skilful architect, and modelled
with great ability. As a painter he posseffed considerable
talents, joined to great faults. His inventions are novel;
his groups well disposed, and his works possess great force
of chiaro-furo; but sometimes from an affectation, either
of grace or grandeur, the attitudes of his figures are ex-
travagant, and the naked parts exaggerated and heavy.
One of his best pictures is the Madonna del Rosario, in
the church of St. Lazzaro at Milan. He was some time di-
rector of the academy of that city. Lazzi.

Crespi, Domenico, a painter of whom the abbé Lanzi
speaks in the highest terms, though his works are little
known out of the state of Milan. He was born in that
city about the year 1590, and at a proper age became
the pupil of Gio. Battista Crespi. He afterwards studied under
Camillo Procaccini, and is by many supposed to have
equalled, if not to have excelled, that master. Crespi and
his whole family were swept away by the plague which raged
at Milan in the year 1633.

One of his best pictures is the Taking down from the
Cross in the church Del Paffione at Milan; but even this is
exceeded by his later works, finifled in 1629, representing
stories of the life of St. Bruno, in the church of the Certosa
in the same city. Lazzi.

Crespi, Giuseppe Maria, whom his companions
called La Spagnuolo, from the style in which he affected to
deck, a Bolognese painter of considerable eminence, born in
1665. At a very early age he was placed under the tuition
of Domenico Canuti, and afterwards became the pupil of
Cignani. After having studied the works of the Caracci,
and other Bolognese painters at Bologna, he travelled to
Venice, and afterwards to Modena and Parma, where he
contemplated those of the divine Correggio. The composi-
tions of Barocci in Urbino and Pforo next drew his atten-
tion; his design being to form a style of his own, by uniting,
as far as he was able, the various excellencies of these dif-
ferent masters.

Giuseppe returned to Bologna, where the fame of his
abilities caused him to be employed by the principal no-
bility, for whom he executed many considerable perfor-
mances. He spent in that city the remainder of a long life
with undiminished reputation, and died in 1747.

The talents of this artist were of the most versatile kind.
His pen posseffed a facility which delighted to blend the
comic even with his most serious subjects. He frequently
designed caricatures, which he engraved with his own hand.
A certain caprice and affection of novelty distinguish his
pictures, which are very numerous, and dispersed into dif-
ferent parts of Europe. The gallery of Dresden contained
some of the most efficaciously; amongst which are the follow-
ing: "the Seven Sacraments," in seven pieces; "the
Virgin, Child, and St. John;" "an Ecce Homo, attended by
two Soldiers," Orlandi. Lanzi.

Crespi, Antonio, and Luigi, sons of the last-men-
tioned artist, and named as some of the best of their father's
scholars; but though their works were much studied, and
composed with more sobriety than those of their father, they
never attained his eminence in the art. Luigi, indeed,
quitted the pencil for the pen, and wrote many considerable
works relating to the arts; and amongst others, the Sup-
plement or 3d volume of the "Pellina Pittrice." He died
in 1779, and Antonio survived him only three years.

Crespin, De', Mario, a painter of the Milanese
school, who flourished about the year 1720. He was a na-
vie of Como, and disciple of Maderno, an artist of that
city, who is known by his pictures of Still life. He, how-

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ever, excelled his master in painting flowers, kitchen uten-
sils, &c. after the manner of Baffian. His works are in some
elimination in the state of Milan. Lanz. Orlandi.
CRESPY, or CRESPY, JEAN, and LOUIS, engravers and
print merchants, who flourished in Paris at the commence-
ment of the 18th century. We have many portraits by
these hands, befids numerous plates from Alban, Le Brun,
Guillot, &c. Amongst them are the following: "a Head
of the Duke of Marlborough," a small upright plate;
a Ditto of Mahomet Esfendi, the Turkish Ambassador in
France." Heinecken.
CRESPY, in Latin Crepitoicum, in Geography, a small
town of France, in the department of the Oise, 15 miles S.
of Compiegne, and 4.5 N.E. of Paris. It is the chief place
of a canton, in the district of Senlis, and contains 2305 in-
habitations. The canton itself has 30 communes, and counts
a population of 1,401 individuals, upon a territorial ex-
tent of 2,422 kilometres and a half.—Allo, a commune in the
department of Aisne, 6 miles N. of Laon. Creps is famous
for the peace concluded here, September 18th, 1544, be-
tween the emperor Charles V. and Francis I. king of
France; for the articles of which, see Robertson's Hist.
CRESS, in Botany, an English name given to various
plants of the class tetradynam, many of which are eaten
in falls.
CRESS, Bassard. See several species of Thlaspi.
CRESS, Brizzel Rock. See Arabis friza.
CRESS, Early Winter, or Bellife. See Erysimus prae-
cox.
CRESS, Fine. See Lepidium petteum.
CRESS, Garden. See Lepidium falicrum. This is the
kind commonly used as an ingredient in spring falls.
CRESS, Heart. See Thlaspi birtum.
CRESS, Indian. See Tragolum.
CRESS, Irish Rybi See Subularia aquatica.
CRESS, Narrow Wild. See Lepidium fuderale.
CRESS, Penny. See Thlaspi arenese.
CRESS, Rock and Shepherd's. See Iberis nudicaulis.
CRESS, Speedwell. See Draba muralis.
CRESS, Swine's. See Coronopus ruelli.
CRESS, Tower-cvall. See Arabis turrita.
CRESS, Wall. See Arabis ibaliena.
CRESS, Water. See Sirsimbra noflarium.
CRESS, Winter. See Erysimus barbara.
CRESA, (an adjective, denoting a native of Crete.)
Vent. 2. 397. "Cliffs, pentandria digyna. Nat. Ord. Un-
identified." Linn. Consolab. July. Ch. Cal. Perianth five-leafed; leaves egg-shaped,
obtuse, incumbent, permanent. Cor. monopetalous, falver-
shaped; tube the length of the calyx, bellied below; bor-
der with five egg-shaped, acute, spreading divisions. Stam.
Filaments five, capillary, long, attached to the tube of the
 corolla; anthers roundish. Pill. Germ superior, egg-
shaped; style two, siphon, the length of the stamens; stigmas simple. Peric. Capsule egg-shaped, one-celled,
two-valved, a little longer than the permanent calyx. Seeds
ovate-oblong, solitary, or four in each capsule.
Eff. Ch. Calyx five-leafed. Corolla falver-shaped. Fila-
ments attached to the tube. Capsule two-valved.
Cham. ptyoti mexan, exi, folio 5; Bash. Pin. 249. Lyf-
macelis-fipicate purpureo albus; Phil. Alm. 236. tab. 43.
fig. 6.) "Corollis barbeldis; capsules with one seed."
A shrub, with a very slender stem, hard and somewhat
woody at the base, dividing at the height of one or two
inches into a great number of slender ramified branches,
which form a close head, five or six inches high. Leaves
alternate, flexible, very small, numerous, entire, vilous.
whitish. Flowers small, collected into a head at the end of
each branch. La March spleaks that there are naturally
two seeds in each capsule, one of them constantly abortive.
A native of salt marshes in the island of Candia, the south of
France, and Italy. 2. C. indica. Mart. 2. Wild. 2.
Retz. Obf. 4. 24. "Tips of the corollas headed; cap-
soles with four seeds." Flowers snow-white. It differs
from the preceding only in this respect, and those exemplified
in the specific character. A native of salt marshes in the
East Indies.
CRESSA, in Ancient Geography, a port of Asia Minor
in the Doric. Pliny places it 11 miles from the island of
Rhodes.—Allo, a town of Asia Minor, in Paphigonia.
Steph. Byz.
CRESSANGES, in Geography, a town of France, in
the department of the Allier; 10 miles S.W. of Moulins.
CRESSERELLE, in Ornithology, the name given by
Buffon to the Kellrel; Stannet, or wind-hover of other
authors; the Palco tinnunculus of Gmelin.
CRESSET, any great light on a beacon, in a lighthouse,
or in a watch-tower.
CRESSEY, or CRESSEY, HUGH PAULIN, or SERENUS,
in Biography, an English Catholic divine, and celebrated
writer among the Papists, who regard him as one of their
ecclesiastical historians, was born at Wakefield in Yorkshire,
in the year 1605. At the grammar-school in that town he
received the early part of his education, and when he had
laid in a sufficient store of classical literature, he was sent
to Oxford. He was then only 14 years of age, but he applied
with so much vigour to his studies, that in the year 1626
he was admitted Fellow of Merton college. After he had
taken his degrees, he entered orders, became chaplain to
lord Wentworth, with whom he continued some years, and,
in 1638, he went to Ireland, as chaplain to lord Falkland,
who, being raised himself to the office of secretary of state,
called Mr. Cressy to be made canon of Windsor in the
year 1642, and also dean of Laughlin, but owing to the
distraeted state of the existing times, he never derived any
profit from either of these preferments. After the death of
his patron, who was killed in the battle of Newbury, he
found himself almost delitute of the means of subsistence,
and accepted the proposal of traveling with Charles Bertie,
eq. who was afterwards created earl of Falmouth, a fa-
vourite of Charles II.; but who was killed in a naval battle
with the Dutch soon after the restoration. He left England
in the year 1644, and making the tour of Italy with his
pupil, he there embraced the Romish religion, and made
a public profession of his faith at Rome in the year 1646.
At Paris, where he went shortly after, he published an
account of the matters of his conversion, which was highly
applauded by the devvotes to that form of religion. From
this period he began to think of devoting himself to a mo-
naical course of life, from which he was dissuaded, but be-
came a member of the Benedictine college of English monks,
when he changed his name from Hugh-Paulin for that of
Serenus de Cressy. He remained at this college seven
years, during which he published a large work on theology,
in two vols. 8vo. About the time of Charles the Second's
restoration he was appointed to the mission in England, and
upon the sovereign's marriage with Catharine the infant of
Portugal, was nominated chaplain to the queen, and refided
chiefly at Somerset-house in the Strand. He died at Earl-
Grinstead.
Grinstead in the year 1674, whither he had retired from his labours and from the controversies in which he had latterly engaged. Although a zealous advocate for the new system which he had adopted, he maintained the character of an open, candied, and good tempered opponent, and fecund the respect and esteem not only of those who belonged to his own communion, but of his Protestant adversaries. His principal work was "The Church History of Britannia, from the beginning of the Norman conquest, under Roman Governors, British Kings, the English-Saxon Heptarchy, the English-Saxon, and Danish Monarchy, &c." in folio. The author had intended to have published another volume of this history, bringing it down to the dissolution of the monasteries by king Henry VIII. but his death already noticed prevented the accomplishment of his design. *Biog. Brit.*

**CRESSY**, in *Geography*. See CRECE.

**CREST**, in *Armoury*, the uppermost part of the defensive armour of the head; rising over the reef, in manner of the comb or tuft of a cock; to sustain the effort of very keen feimeters, &c. It has its name from *creffa*, cock's comb. It likewise denotes a tuft or plume of feathers on a helmet. Ancestrally soigrettes, which the cavaliers wore of a greater height than the infantry, were regarded as objects of luxury and ornament, and of terror to the army. They were originally of horsehair. *Herodotus* describes the invention of them to the Ethiopians. They fill use plumes of bird's feathers, and prefer those of a red colour, on account of its resemblance to that of blood. Sometimes the ancients put three on one helmet to distinguish perhaps different ranks or degrees, as the Turks use double and triple tails.

**CREST**, Cup, Cretse. Fr. in *Fortification*, is employed to denote the earth thrown out of a ditch, trench, &c. It is also made use of to express the most elevated part of a parapet or glacis.

**CREST**, Le., in *Geography*, a town of France, in the department of the Drôme, situated on this river, which divides it north and south, 16 miles S.E. of Valence, 15 N. of Orange, 48 S. by E. of Grenoble, and 432 miles S. by E. of Paris. Its whole population comprises 4500 individuals, but each part of the town is the chief place of a canton, in the district of Die; the northern contains 3500, and its canton 11,700 inhabitants, dispersed in 16 communes, upon a territorial extent of 285 kilomètres; the southern contains only 700, and its canton 5000 inhabitants in 12 communes, and upon an extent of 222 kilomètres and a half.—Alfo, a commune in the department of the Puy-de-Dôme, 12 miles S. of Clermont.

**CREST**, a town of France, in the department of the Puy-de-Dôme, 2 leagues S.E. of Clermont-Ferrand.

**CREST**, in *Herodoty*, denotes the uppermost part of an armoury; or that part rising over the cock, or helmet.

Next to the mantle, says Guilielm, the crest or cognizance claims the highest place, being vested on the most eminent part of the helmet; yet st, as to admit an interposition of some ercol, wreath, chapæau, crown, &c.

The ancient warriors wore crests to strike terror in their enemies, as the flight of the spoils of animals they had killed; or to give them the more formidable mien, by making them appear taller, &c.

In the ancient tournaments, the cavaliers had plumes of feathers, especially those of ostriches and herons, for their crests; these tufts they called plumarts; and they were placed in tubes, on the tops of high caps, or bonnets. Some had their crests of leather; others of parchment, paiëteboard, &c. painted or varnished, to keep out the weather; others of steel, wood, &c. on which were sometimes represented a member or ordinary of the coat; as, an eagle, fleur-de-lis, &c. but never any of those called honourable ordinaries, as pale, fesse, &c. The crests were changeable at pleasure; being reputed no other than as an arbitrary device, or ornament.

*Herodotus* attributes the rise of crests to the Carians, who first bore feathers on their caps, and painted figures on their bucklers: whence the Persians called them cock.

The crest is esteemed a greater mark of nobility than the armoury, as being born at Tournaments; to which none were admitted, till they had given proof of their nobility. Sometimes it serves to distinguish the several branches of a family. It has also served, on occasion, as the distinguishing badge of factions. Sometimes the crest is taken from the device; but more usually it is formed of some piece of the arms: thus, the emperor's crest is an eagle; that of Calilfe, a callé, &c. Families that exchange arms, as the houses of Brunswick and Cologne have done, do not change their crests; the first still retain the horse, and the latter the mermaid.

The crest of the arms of England is a lion passant gardant, crowned with an imperial crown; that of France, a fleur-de-lis.

*CREST*, among *Carvers*, an imagery, or carved work, to adorn the head, or top, of any thing: like our modern corniche.

**CRESTED**, in *Herodoty*, is a term applied to a cock, or other bird, whose crest is of a different tinture from other parts.

**CRESTED grass.** See GRASS.

**CRESTED SALK.** See STALK.

**CREST-FALLEN**, is spoken of a horse, when the upper part of the neck, on which the mane grows, does not stand upright, but hangs either to one side or the other.

**CRESTI, DOMENICO**, in *Biography*. See DA PASSIGNano.

**CRESTON, or CRESTINO**, in *Ancient Geography*, a town of Thrace, and probably the capital of Cretonia, a province of that country.

**CRETA**, in *Natural History*, and in *Medicine*. See CHALK.

**CRETE**, in *Ancient Geography*, now called Candia from its capital, but known in very ancient times by the names of Aera, Chitonia, Idaea, Curête, and Macaria, is one of the largest islands in the Mediterranean; and lies between the Archipelago to the north, the African sea to the south, the Carpathian to the east, and the Ionian to the west. Its name Crete is derived by some from the Cretuses, who are said to have been its first inhabitants, by others from the nymph Crete, daughter of Hephæstus, and by others from Creitus, the son of Jupiter, who is supposed to have reigned here. This island, in remote ages, was celebrated for its fertility; it abounded in all sorts of grain, as its plains were covered with a deep rich soil, and it was plentifully watered by small rivers. The fruits, according to Pliny's account, were much superior to those of any other countries; and its wines have been universally commended. The air was anciently deemed very pure and salubrious, and still retains the same property, though under the Mahometan yoke great part of the country lies uncultivated. From the fruitfulness of its soil, and the purity of its air, it obtained the appellation of Macaria, or the fortunate island. In former times 100 cities were reckoned in this island, 90 before the Trojan war, and 10 more after the Dorians settled here;
CRETE.

here; whence sprang the name of Hecatompole. Of these 120 cities 40 remained in the time of Ptolemy, for he enumerated so many. The most noted of these were Gnophus, Cydonia, Gortyna, Lycurgus, Hierapytna, Eleuthera, Rithymna, and Retimo, Heraclea, Praisos, Apteraon, and Arcadi. The principal mountain of this island is Ida, and next to this are Disce and Leuclet. Its rivers are few and incon siderable; but this defect is supplied by many creeks and bays, and some capacious and safe harbours. The lab yriny of Daedalus near mount Ida has been recorded among its ancient curiosities, but no traces of it were discoverable in the time of Pliny. The first inhabitants of Crete were, according to Diodorus Siculus, the Idæi Dæstylli, 100 in number, who inhabited mount Ida. (See DACTYLI Ida. ) Next to these were the 9 Curetes. (See CURETES. ) Contemporary with these were the Titans, which fcc. According to several ancient authors, the Curetes and Idæi Dæstylli were the same people, and did not settle in Crete till the time of Minos. Bochart fuppofes, from a similarity between the appellation Curetes and that of Certhites, a tribe among the Phœnicians, that they came from Palestine. But long before they settled in Crete a colony of Pelagians had peopled the eastern coast of the island. After them, Teutamus, the grandfather of Minos, brought thither a colony of Dorians from Laconia, and the territory of Olympis, in Peloponnesus. These inhabitants occupied coves and huts, and cultivated on the spontaneous productions of the earth; but were at last reduced into one kingdom in the reign of Minos, who was their firt faw giver, built many towns, and introduced the arts of ploughing and fowing. In the reign of Minos, Rhadamantus his brother transported several colonies into the neighbouring islands, which he bel lowed upon the commanders of his army. The Trojans, as the most ancient writers have faid, were Cretans. The government of the Cretans was at first monarchical. The first king, who reigned in Crete, was, according to Eusebios, Cres or Cretes, of whom we have many discordant and fabulous accounts. In the lit of sovereigns we find that Strabo and Paulanias diftinguифh two under the name of Rhadamantus, and two under that of Minos. The famous Rhadamantus, who, according to the poets, was judge of the infernal regions, was brother to Minos II. Minos, the famous law-giver of Crete, was the firit of the Grecians who equipped a fleet, and gained the dominion of the sea; the father of Deucalon the Argonaut, and also of Androgewus, who was privately murdered by Ceæsus king of Athens; in con fquence of which outrage Minos denounced war against the Athenians. But finding all attempts to revenge the death of his fon unsuccessful, he made his appeal to the gods, who are faid to have afflicted the Athenians with pellagene and famine; upon which he confounded the oracle of Delphi, and were informed that they must not expect any relief, till they were reconciled to Minos. The Cretans, as the condition of their deliver ance, imposed upon them a yearly tribute of 7 boys and 7 girls, whom he condemned to be devoured by the Minotaur, during the space of 7 or 9 years. Minos, having for 3 succeeding years exacted this fanguinary tribute, Theseus, who had performed many glorious exploits, voluntarily offered himself to be one of the unhappy victims; and accordingly, failing with his devoted companions to Crete, he there killed the Minotaur, and rescued his country from the bloody Cretan tribute. Minos was, according to Plato and Aristotle, the intitutor of those laws, which they have highly commendened. He first banifhed idlenefs and luxury from his dominions; and finding means of employment for all his subjects, either at home or abroad, he would not suffer any of them, what ever might be their rank, to lead an indolent life; but obliged them either to serve in the army, or apply to agriculture, which he raised into great reputation. In order to establish a kind of equality among his subjects, he decreed, that in each city the children should be educated together, in the fame maxims, exercises, and arts; that they should be accustomed to bear hunger and thirst, heat and cold; to renounce themselves to labour and difficulty; to skirmish with each other in small parties, and to exercise themselves in a kind of dance with their armour, which was afterwards called the Pyrrhic. They were also accustomed to the use of the bow, in which they excelled. The poor and rich took their repasts together, and fubmitted on the fame diet; and the expense of their meals was defrayed by the public; one part of the revenues of the flate being applied to the purposes of religion, and the salaries of the magistrates, and the reft allotted for the public fads. After their repast, the old men discourefed of the actions and virtues of their ancen tors, and of fuch as had diftinguifhed themfelves, either by their valour in war, or their wisdom in peace; and the youth, who were prcfent at these entertainments, were exhorted to profe thefe great persons to themselves, as models for the forming of their manners, and for the regulation of their conduct. Another of the institutions of Minos, which Plato admires the moft, was to infpire the youth times with a high repect for the maxims, customs, and laws of their own country. He would not fuffer them to queftion the widom of their conftitution; but commanded them to consider the laws as dictated by the gods themfelves. He paid the fame regard to the magistrates and aged persons, whom he enjoined every one to treat with repect and honour: and that nothing might leffen the reverence due to age, he ordained, that if any defects were obferved in them, they fhould never be mentioned in the prcfence of the youth. Slaves were also better treated at Crete than any where elfe; for here it was a cuftom, on occasion of the fads of Mercury, for the masters to wait on their slaves at table, and to perform the fame offices which they received from them during the reft of the year. This cuflom was de signed to remind men of the primitive flate of the world, in which all men were equal; and to dignify to the masters, that their fervants were of the fame nature with themselves. The laws of Minos were anciently in fuch repute, that Lycurgus paflèd a confiderable time in Crete, in order to fudy the Cretan conftitution, that he might form his laws upon the model of those which then obtained in the island. Plato tells us, that Crete, under the government of fo wife a prince, became the abode of virtue, probity, and justice; and that the laws which he eflablifhed were fo well founded in justice and equity, that they fubifited in their full vigour even in his time, that is, above 900 years after they had been firt published. It is true, the Cretans afterwards generated from their ancient probity, and at length, by an entire change of manners, became the moft vicious nation that was known either to the Greeks or Latins. Polybius (l. vi.) afferts, that the Cretans in his time were avaricious and felfifh to fuch a degree, as to think no lucre fordir. Suidas and Callimachus (Hymn. in Jov. v. 8.) give them the character of liars and impollors; and justify the charac ter given of them by St. Paul, on the testimony of one of their own poets, probably Epenemides, who paints them in very disgraceful colours. The impurity of their amours is too well known from the accounts given of them by Strabo (l. x.) Servius (Ann. l. x. v. 325.); and Athenæus (Deip nos. l. xiii., cci.) Nevertheless, this change of manners does not affect the probity of the ancient Cretans, nor leffen the glory of their legislator. We cannot forbear mentioning, however,
however, that, whilst by his institutions every citizen was obliged to marry, he contrived to prevent their having too many children by very unwarrentable means. Whether in Crete the fertility or extent of the lands did not correspond to the number of the inhabitants, or that the men were more robust, and the women more fruitful, Minos authorized, by his laws, a passion which nature disallows, and permitted an excess which thinly could never come without horror. (See Arist. l. ii. c. 22. Strabo, l. vi. Athen. l. xiii.)

We learn from Suidas, that the race of Minos possessed the sovereignty of Crete, till the abolition of the monarchical government. Upon the introduction of a republican form, the chief power was vested in the senate, composed of 30 members, called by Aristotle (De Republ. l. i. c. 10.) the public council of the nation. The resolutions of this body, however, were of no force till the people had confirmed them by their suffrages. Next in authority to the senate were the "coemi," magistrates, as their name imports, appointed for the maintaining of good order (σωφος) in the state. They were 10 in number, and refembl'd the Spartan ephors; they were chosen out of the whole body of the people, and were intended as a balance between the people and the senate, and a check upon both; for, without their approbation, no decree had any validity. They commanded the army, and the magistrates of the city; were judges of all causes of the whole body, but were liable to be called to account; whereas the senators were not responsible for their administration. Out of this body the senators were chosen. In this condition the island of Crete continued for many years. But it was occasionally disturbed by civil contests. In the time of Philip, the father of Perseus, the Graecian and Gortyanians had reduced all the other cities of the island, and divided their conquests; so that the Cretans were no longer free, but subject to one of these cities, and obliged to acknowledge their sujection by an annual tribute. (Polyb. l. iv.) By these internal commotions the Cretans became skilled in the arts of war; and their reputation in this respect was so general among other nations, that most states and princes always maintained in their armies some bodies of Cretan bowmen and slingers; the Cretans having been, in all ages, as Paulinus observes (in Attic.), remarkable for their dexterity and experience in the use of the bow and sling. Xenophon informs us (lib. iv. ch. 2.) that they were of great service in the retreat of the 10,000. And if we credit Arrian (De Exped. Alex.), many of Alexander's victories were owing to the Cretan auxiliaries. Livy also mentions (lib. xxxvii. c. 41, lib. xxxviii. c. 21.) the advantages which the Romans derived from the archers and slingers of Crete, in the famous battle fought near mount Olympus. After the Romans became acquainted with Crete, they employed the inhabitants in all their expeditions, keeping constantly in their pay a numerous body of Cretan auxiliaries, who, in general, distinguished themselves by their gallantry. (Livy, ubi supra.) However, notwithstanding the alliance formed between them and the Romans, the Cretans entered into measures with other potentates, without consulting the Roman senate. This conduct furnished the Romans (B. C. 68) with a specious pretext for enlaving an island, which, till that time, had been free from all foreign sujection. The Romans had formed a purpose of conquering Crete; and finding an occasion of quarrel, they employed means for this purpose. The Cretans endeavoured to conciliate their enemies; but their ambassadors returned from Rome without succeeding in their embassy. The conditions imposed upon them were so humiliating, that they chose rather to hazard a war, than to enjoy peace upon such terms. As soon as the ambassadors were difmissed, Metellus embarked with three legions, and arriving on the coast of Crete, landed without opposition. Such was the progress of his arms, that the inhabitants of the island were compelled to submit to the Roman yoke (B. C. 66.) Metellus changed their form of government; obliged them to live according to the laws of Rome; imposed an annual tribute upon the whole island; and reduced it to a Roman province, after it had enjoyed its liberties for a series of ages. According to Velcins Paterculus, Eutropius, and other historians, the Romans spent three whole years in this work of subjugation, having to encounter with men no less brave than themselves. Metellus was honoured with a triumph, and the surname of Creoticus or the Cretan, for importunely did the Romans deem this conquest. For the subsequent history and present state of this island, see CANDIA.

CRETE, Set of, or Cretan sea, is properly that part of the Aegean sea, or Archipelago, which lies about Crete, and which contained the islands of Claude, Dia, Letoa, Agilia, Calymea, Apterae, Thera, &c.

CRETEA, a country of the Peloponnesus, in Arcadia, where, and not in Crete, according to Paulaniers, Jupiter was brought up.

CRETHOTE, a town of the Thracian Chersonesus, on the borders of the Propontide.

CRETI, DONATO, in Biography, a painter, who was born at Cretonus, in 1651, and educated at Bologna, in the school of Lorenzo Panninioli; but, although he is considered one of the best disciples of that master, his style partakes more of that of Simone de Pefaro, whose beautiful etchings were the admiration of Crete. By flaying these, he acquired that delicacy and facility of drawing with the pen, which have rendered his sketches so generally and so deservedly esteemed. As a painter, he is little known out of Bologna; but some of his pictures there exist, particularly an altar piece in the church of the Padri Predicatori, and the Feast of Alexander, in the Palazzo Fava, which poises great merit, although the colouring of them is somewhat crude and disagreeable. Donato died in 1742. Lanzo. Orlandi.

CRETIC, CRETICUS, is a trifllable foot, consisting of one short syllable between two long ones; as in the words ἡεργής, quove nique.

CRETIN, GUILLAUME DUBOIS, dit, in Biography, an old French poet, was a native of Lyons, and died in the year 1525. He was historiographer to the king, under the reign of Charles VIII., Louis XI., and Francis I. of France. His works were reprinted at Paris in 1724. They are full of puns, conundrums, and equivocal expressions, as has justly been observed by Rabelais in his Pantagruel, where Cretin is designated by the name of old Romingrobin. Now. Dictionaire Historique.

CRETINS, is the name given in the republic of Valais in Switzerland, and in the department of Mont Blanc in France, formerly the duchy of Savoy, to helpless idiots, whose organization is so incomplete, that the most preening wants of life scarcely draw from them any symptoms of fenation. They generally lie on couches, or on the ground, like felnels brutes. Sometimes, says Mr. Coxe, in his 'Travels through Switzerland,' they are seen hastling in the sun, with flaming eyes, open mouths, their tongues half out, and their heads hanging down, exhibiting the most afflicting spectacle of intelletual imbecility that can possibly be conceived. Mr. J. G. Le Maitre, in his travels after the peace of Amiens, saw, at Martigny in the Valais, innumerable idiots with dilffornt forms, "grinning horribly a gladly smile" in almost every window.

According to the author of the "Recherches fur les Americains," Cretins are deaf, mute, and almost indefinable to blows; but they are neither furious nor malevolent; they have
have no other stimulus than their physical wants, are never contradicted or injured by children, and are approached with reverence by old people.

Every humane attention is paid to these miserable objects, be their parents ever so poor. A fortunate prejudice preserves their excellence. The inhabitants of the countries where they are found imagine that it is a mark of divine favour to have an idiot of this kind born in their family. They esteem them "Blessings from Heaven," and call them "Souls of God without Sin;" because, as they are incapable of intentional criminality, they consider them as certain of happiness in a future state. Instead of neglecting these unhappy mortals, they treat them with the most affectionate kindness, and deprive themselves of common necessaries in order to afford all the conveniences of life to these supposed favourites of heaven.

Mr. Cosse says, that these idiots are offered to marry, as well among themselves as with others. However, Mr. F. J. Durand, in his "Statistique Élementaire de la Suisse," published at Lausanne in 1795, assures us that they do not perpetuate their race. Their organization is incomplete from their birth, and often in a family of five or six children there is but one cretin. This monstrosity, therefore, cannot, as it has been asserted, arise from the disgusting filthiness of the parents, for the want of cleanliness in the inhabitants of those countries has been greatly exaggerated; and there are cretins in families of the utmost cleanliness and of the first opulence. Nor can it be owing to their physical education; for the idiots from the cradle are fed and brought up like their brothers and sisters, who labour under no intellectual imbecility. Neither can it be attributed to the excessive heat of the valleys, or to the unhealthy fomentas of the water, since those cauces would operate equally on all the inhabitants.

These remarks are amply confirmed by the learned Ramond, in his "Observations sur nos Pyrénées." He affirms, that the idiots of the Valais are inferior both in number and imbecility to those of the valley of Luchen, and other valleys in the Pyrénées. "On observant fad conformity," says he, "who would not suppose that the cauca that causes this degradation must be the fame?" And yet the cretins of the Valais are found towards the south in confined valleys, on a mofoil soil, and having none but stagnant water; whilst, in the Pyrénées, they are mostly in fracious valleys towards the north, in an open country, in a dry and temperate atmosphere, and surrounded by pure and limpid springs.

Besides, these idiots are not absolutely confined to the Alps and Pyrénées; they are met with in other countries, yet not so frequently. Sir George Staunton informs us, in his "Embassy to China," that he found traces of cretins in a very mountainous district of that country. Some years ago there was at Hull, a female cretin of the name of Southern, and another at Plymouth, a boy, son to Mr. Cowley, the inn-keeper. All that can be affirmed with truth is, that idiots are more abundant in some districts of the Valais, than perhaps in any other part of the globe.

A physician of Lyons, happening to be at Sion, the capital of the Valais, three days after the death of a cretin, solicited, in vain, permission to open the body, although the cauca of this extraordinary appearance have not yet been satisfactorily explained. The abbe Richard, in his "Voyage d'Italie," has published several ingenious conjectures on this subject under the article Savoye. M. de Sauflure acried on this disorder to the concentrated heat and stagnant air; but for further particulars we refer to the article Coître.

CRETO, in Antiquity, a certain number of days allowed the heir to consider whether he would act as heir to the deceased or not; after which time if he did not act, he was excluded from the estate.

CRETOPOLIS, in Ancient Geography, a town of Asia, in Carthana, a country of Pamphylia.

CREVACORE, in Geography, a small town of France, in the department of Sée, which formerly constituted part of Piedmont in Italy. It is the chief place of a canton, in the district of Vercell. The town contains 919, and the canton 6792 inhabitants, dispersed in 18 communes. Before the revolution it wasulary a marquisate, and had a very fine castle.

CREVALCORE, Da, Antonio, in Biography, a painter, whose family name was Leonelli, but who was called da Crevalcore, from the place of his birth, a town in the Bolognese flat. This artist flourished at Bologna in the year 1590, and distinguished himself as a portrait painter. He also represented, with success, fruits, flowers, and animals, and was besides a celebrated musician at Orlandi.

CREVALCORE, Da, Pietro Maria, the scholar of Domenico Calvaert, designed and painted with great bravura at Bologna. His pictures shew that he studied the works of the Caracci with some advantage. He flourished in the year 1580. Lanzi.

CREVASTA, in Geography, a town of European Turkey, in the province of Albania; 36 miles S.E. of Durazzo.—Also a river of European Turkey, which runs into the Adriatic, 8 miles S. of Joannina, in the province of Albania.

CREVECOEUR, a small town of France, in the department of the Oise; 15 miles N. of Beauvais, which, before the revolution, conferred the title of marquis on the lords of the manor. It is the chief place of a canton, in the district of Clermont, and has some manufactures of woollen cloth. The town contains 2615, and the canton 11,207 inhabitants, in 20 communes, upon a territorial extent of 155 kilometres.

CREVECOEUR, a Dutch fort and factory in Africa at Accra, on the Gold Coast, situated within cannon-shot of the English fort James, on the extremity of a high rock; the beach for landing being under the fire of the artillery and musketry of the fort. It is a square building, flanked with batteries joined by long curtains, of such irregular construction that it cannot withstand a long attack.

CREVELT, a town of France, in the department of the Roer, which formerly constituted a part of the duchy of Flanders, in Belgium. It is the chief place of a district, and very neatly built. It has a sub-prefect, a court of justice, a jailer-office, and 7443 inhabitants; several of whom are Memonites, and whose manufactures of woollen and linen cloth, silk, velvet, ribbands, soap, and tobacco, are exceedingly flourishing. The district has besides excellent pastures, is famous for its good butter, and abounds with all sorts of corn, hemp, and flax. It contains 11 cantons, 152 communes, and 137,215 inhabitants, upon an extent of 1375 kilometres.

CREVIC, a town of France, in the department of the Meurthe, and district of Luneville; 1 1/2 league N.W. of Luneville.

CREVIER, John Baptist Lewis, in Biography, was born at Paris in 1663, studied under the celebrated Rollin, was professor of rhetoric at the college of Beauvais; and, after the death of his master, completed his unhonoured Roman History in 8 volumes. He also edited Livy, with notes, in 4to.; wrote the History of the Roman Emperors, in 6 vols. in 4to.; the History of the University of Paris, in 7 vols. 12mo., and a French Rhetoric, in 2 vols. 12mo., which has been reprinted at Liège in 1787. All his works...
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CREUZBERG.
CREUSIS,
in
Geography,
a
small
town
of
France,
in
the
department
of
Calvados; 12 miles N.W. of Caen, and
6 miles E. of Bayeux. It is the chief place of a
canton, in the district of Caen, and has a population
of 1660 individuals. The canton itself contains 31
communes, and 14,039 inhabitants, upon a territorial
distance of 127
kilometres and a half.
CREUES, or CREUZ, Capo, a cape of Spain, on
the
coast
of
Catalonia
in
the
Mediterranean. N. lat. 42° 29'.
Long 10° 55' E. of the peak of Tenerife.
CREUSE, a river of France, which gives its name
to one of the nine central departments. It has its
source in the south, in the mountains which border
the
department
of
Corrèze, flows to the
north, and, passing by Aubupon, Argenton, Le
Blanc, La Roche Posay, and La Guerche, it
throws itself into the river Vienne, below La Haye, at
a
place
called
Le
Bec
de
Eaux.
It
takes
up the Little
Creufe and the Gaumepe. The Creufe is navigable
only
in
some
places: its course is about 230 kilometres.
CREUSE, the Department of the, is the seventh
central department of France. Its capital is Guéret. It
contains
of
the
province
formerly
called
La Marche, and owes its
name to the river Creufe.
To the northwelt this department is bounded by
that
of
the
Indre; to the north-east by that of the A
her; to
the
east
by
that
of
the
Pay-de-Dôme; to the south by that of
the Corrèze; and to the west by that of the Upper
Vienne. Its
principal
rivers
are
the
Creufe, the Little Creufe, the
Tarde, Thorian, Ardour, and Gaumepe.
The climate is ferene and salubrious, but rather cold.
The
soil
is
not
favourable
to
wheat, but it produces yea,
rosettes, garden fruits, and the vine. There are good pastures
for
horses, cattle, and sheep; coal mines, marble quarries,
and
mineral springs. The principal trade is in cattle, wool, and
cheese.
The
department
of
the
Creufe has some capital manufac-
tures of tapelies, coarse woollens, and linen cloth. Its
territorial extent is 5794 square kilometres and a half. The
number of inhabitants amounts to 216,255, or 751
individuals
to
the
figure
league. The average contribution of
each individual annually is about 4.33 livres.
Beside the capital, Guéret, the principal towns are
Aubupon, Bonnat, Eauz, Felletin, Bourganeuf, and
Bouffac.
CREUSIS, in Ancient Geography, a maritime town of
Bona, situated in the gulf of Comne. It was the arsenal of
the Thebouis. Pant. Nat. ix. 108. Bocc. c. 82.
CREUSSEN, in Geography, a small town of Franconia,
in
Germany, 9 miles W. of Erla, with a flourishing manu-
facture of earthenware. It is also called Crasen, in Latin
Crasina, and belonged to the king of Prussia as margrave
of
Anspach.
CREUTZBERG, or CREUTZBURG, a small town of
Prussia, in the circle of Netingen in East Prussia, with
an
old
ruined
castle.
CREUTZFELDER, Johan Georg, in Biography,
France, a portrait painter, who died at Nuremberg in 1635. He
has, amongst many others, the following portraits
engraved after this artist: Gottlob, count of Oettingen, a
small plate, by L. Kilian; Philip Gottlob, count of Hohen-
lohe, a large oval ditto by Haazesman. Heinriken.
CREUTZNACH, in Latin Crucinacum, in Geogra-
phy, a small town of France, in the department of Rhine
and Moselle, on the river Nahe, 24 miles S.W. of Mayence.
It is the chief place of a canton, in the district of Simmern,
and has 3187 inhabitants. The canton contains 17
communes, and a population of 5265 individuals. The salt-
prings near Creutznach are very important, and produce
annually to the value of from 220 to 250,000 French livres
to
the
public
revenue.
CREUTZOFF, a town of the duchy of Courland; 16
miles S.S.W. of Mitau.
CREUX, a term in Sculpure, much used by the French
though not yet, that we know, of naturalized among us;
but the want of a word of equal import in English, as it
has frequently put us under a necessity of using this in
the
course
of
the
present
work; so it pleads strongly for its
ad-
mission into our language.
Creux originally signifies a hollow, cavity, or pit, out of
which something has been scooped, or dug: hence it is
used to denote that kind of sculpture, and graving, where
the lines and figures are cut and formed within the face, or
plane of the plate, or matter engraved on.
In which sense it stands opposed to relief, where the
lines and figures are embedded, and appear prominent above
the face of the matter.
CREUZBURG, in Geography, a town of Bohemia, in
the circle of Czalan; 10 miles N.E. of Teutchen-Brod.
CREW, the company of sailors belonging to a ship, boat,
or other vessel.
The
sailors
that
are
to
work
and
manage
a
ship
are
regulated
by
the
number
of
laths
it
may
carry;
each
lath
making
two
tun.
The
crew
of
a
Dutch
ship, from 40
to
50
laths, is seven
sailors and a swabber; from 50 to 60 laths, the crew consists
of eight men and swabber; and thus increases at the rate
of
one
man
for
every
ten
laths; so
that
a
ship
of
100
laths
has
twelve
men, &c. English and French
crews are usually
stronger than Dutch but always in about the same proportion.
In a ship of war there are several particular crews, or
gangs, as the boat-wain's crew; the carpenter's crew; the
gunner's crew, &c.
CREW, Nathaniel, in Biography, an English prelate
who
flourished in the seventeenth and eighteenth centuries,
was born in 1613, and was the fifth son of lord Crew. In
the year 1632 he was admitted commoner of Lincoln
college in Oxford, where he took his degree in February
1655-6, and shortly after was chosen fellow of that college.
At the restoration of Charles II he became a zealous ad-
horter of the royal cause, and was soon made one of the
proctors of the university. In the following year he took
the
degree
of
doctor
of
laws, and then went into holy or-
ders. He was elected rector of Lincoln college, and in the
following April he was instated dean of Chichester, with
which he held the precentorship. He became a favourite
of the king, and was appointed clerk of the closet, and in
1671 was raised to the see of Oxford. He had held this
situation but three years, when he was created to the more
important bishopric of Durham, which was given him in
3
A
consequence

consequence of some services rendered by him to the duke of York, to whose measures he seems to have been but too subservient. In 1676 he was admitted to the rank of privy-councillor; and on the accession of James II. to the throne, he obtained the appointment of dean of the chapel-royal in the room of Dr. Compton, bishop of London, who was rendered unfit by his honest and zealous opposition to popery. The principles of bishop Crew seem never to have flourished in his way of preferment; he could change with the times, and join in any acts that his superiors might deem fit to be performed. He was accordingly selected as one of the ecclesiastical commissioners to carry into effect the determinations of James, which finally cost the ill-fated sovereign his crown. This commisary Crew was the abetter of many of the cruel projects which disgraced that age. He took an active part in the fullest of the bishop of London, and in the persecutions inflicted upon Mr. Samuel Johnson, an eminent divine; and he countenanced by his presence another prosecution carried on against Dr. Peschey. In the same year he offered to attend the pope's nuncio at his public entry into London, but it is said his coachman refused to drive him that way. He proceeded on in this course without any remorse, or apparent anxiety, till he found the prince of Orange's party likely to prevail; he then began to contrive means for escaping the punishment due to his misdeeds. When William ascended the throne, the name of Crew was omitted in the pardon granted to those who had been active for the fallen monarch. The bishop abjured, and offered to resign his office if he might be allowed a thousand a-year during life. By the intercession of Dr. Tillotson he was permitted to make peace, and retain his dignity on very easy terms. In 1691 he proceeded to the tittle and sibbies of his late father, owing to the death of the last of his elder brothers, and from this time he passed through life without much notice, and spent his time in works of munificence, hospitality, and charity. 

He died in September, 1721, aged 88, having held the see of Durham 47 years, and his office as bishop half a century, which, with the exception of Bourchier, archbishop of Canterbury, was a longer period than any Englishman had ever enjoyed that distinguished honour. His lordship died without issue; nor did he leave any works as a literary character to render his name illustrious, and his conduct as a man and acourier have no claim to the gratitude of posterity. They deserve, however, notice, in order that others may be deterred from acting so inglorious a part when temptations to wealth or to worldly honour are held out to draw them from the line of duty and strict integrity.

CREW, in Ornithology, the daker-hen or rail of Ray, W'ilughby, and Albinus, the cane-gallinule of Pennant and Latham, and rallus with red ferruginous wings of Linnaeus and Gmelin. See Rallus C.,

CREX, in Ancient Geography, an island of the Adriatic sea, on the coast of Illyria, according to Pliny; called by Ptolemy Crepsia, and now Cherfo.

CREID, in the English Salt Works, the name given to a fort of cafe used in some places instead of the dib, to put the salt into as it is taken out of the boiling pan.

These crabs are like hay-strings, wide at the top, and tapering to a narrow bottom, with wooden tops on each side, placed so close, that the salt cannot easily fall through them. Through these apertures, however, the superfluous saline liquor drains out, and leaves the salt, after a few days, dry enough to be added to the heaps that flound ready for sale. At Lymington, and in some other places, they use, instead of these crabs, a fort of wooden troughs with holes in the bottom, through which the saline liquor drains from the salt, and falls into vessels placed underneath to receive it; and in other places they use barrows or wicker wickets, out of which the liquor runs with great care on all sides at once.

Crist-biting, a vice of horses; this term is of purely English origin, which is not frequent with the terms used in the management or diseases of the horse, which are for the most part French or Latin strangely corrupted.

The crib denotes, in more modern phrase, the manger, from manger, French, to eat; the crib being left for the fodder of the cows, to which the name is at present exclusively applied; the original crib, since oats have been introduced, being fixed to the wall of the stable for the horse, has obtained the name of rack, so that the term crib-biting to some would appear improper, to others too antiquated, or entirely obsolete. The crib-biting horse has generally a lean contracted appearance, the skin being contracted about the ribs, a sunken watery eye, or else too dry; the muscles of the face also, as well as the skin, drawn up with rigidness; when unemployed in eating, his almost constant amputation is to graze the rail of the manger with his front teeth, then to draw himself up to it as to a fixed point, by a general contraction of all the muscles of the head, neck, and trunk; at the same time the effort is attended with a grunting sound, apparently from air expelled by the mouth; a relaxation succeeds, and then a new effort, flattering the manger very much with the tongue, as the mouth being held open, the falva naturally takes this direction.

The horse that has contracted this unhappily habit grows lean, his digestion is sometimes impaired, and it is generally conceived he draws a arrow into his stomach, which is the cause of this; his temper becomes foured, and more or less weak-ness and unfitness for service ensue, according to his natural strength.
strength: for some do not appear materially in this respect to be injured by it; while others are obviously rendered much weaker by it, and more incapable of a proper day's work; it appears indeed that horses of a fiery, hot, and unkind temper get the most easily into this vice.

How this extraordinary propensity is first created, has not been. we believe, much attended to; with some it appears to arise naturally, as though the fucking of air gave them pleasure, or a relief from some fret, of suffering: at first we imagined pains of the stomach from acidity, or other causes might create it, as horses eat dirt, or gnaw the walls, to alleviate unpleasant feelings of this organ. The bad digestion and foul feeding are probably only a consequence and not a cause of this malady. That horses at all disposed to it may be easily led into it by the practices of the grooms in cleaning them, we have little doubt; if they clean them before the manger, and irritate them with too severe a comb, and in parts where they cannot endure it, they seize upon the manger for a counter action to their sufferings, and in doing this must first get a habit of it, and may extend it to the removing of other pains, or distressful feelings. By this means especially if the grooms, and some have a happy knack of this, after every bite, put in a blow or stroke of the comb, till they follow each other in regular succession, they create a vice which may or may not continue afterwards, according to the situation and circumstances attending the individual. Some are said to get it by imitation of other horses; whether or not the same practices of the groom applied to several horses in the same stable, should not be rather apprehended to be the cause, we are not assured; in one instance, we think, we observed this satisfactorily enough to be the cause, though it passed for imitation.

To break horses of this vice is difficult; cutting off the end of the tongue has been resorted to by some as a cure for it; the forefeet created by this means destroying the inclination to the trick for a time; when the habit once being interrupted, might or might not again return.

Another and more useful way with these horses is to buckle a strap tight about their neck, so tight as to prevent, by the contraction of the throat, the power of doing it, or at any rate, creating sufficient uneasiness to dissuade them to it.

In preventing the habit, it appears but reasonable with regard to such horses as are inclined to it, always to turn them from the manger before they are cleaned, with their heads to the heel-polls, or to clean them in the open air, or by other means, to avoid as much as possible irritating those that have preternaturally thin and irritable skins, by too rough an iron comb, and to break through any regular habit of inducing biting after each stroke of the comb, for they learn to do this at first only in the most fitable parts, as the flanks, the inside of the thighs, the belly, &c. and afterwards in every part on the slightest touch of the comb, or even the sight of it. Some horses, it must be admitted, are truly difficult to clean; many also are rendered more so than they need be by inconsiderate rhinelnets, and ill applied feverity, to prevent these associations and mischief. Proper precautions cannot be taken too early against a habit of this kind, for once formed, it is not easily afterwards to be subdued, even by great patience and well-judged measures.

In concluding these remarks, we may observe, that in the purchase and sale of horses this vice is not unfreqently a subject of litigation; should we venture to interpose an opinion on the question usually agitated in those occasions, whether a horse be unfound or not, or, in other words, returnable or not with this defect, we should find, if the warranty extended to foals only, the horse is not returnable, as horses are often found with it as to their going; but if vice is faulted in the warranty, the horse is unquestionably returnable, as it may be ranked among the worst of them.

CRIEBAGE, a game at cards, wherein no cards are thrown out, and the lot makes sixty-one; it being an advantage to deal, by reason of the crib, it is proper to lift for it; and whoever has the least card has the last deal.

CRIEBATH Lime-works, in the south-west corner of Brecon county, in South Wales, are the property of Matthew Gwyn, esq. leased to Shearby and Co. who have made a rail-way extension of the line of the Swansea canal, of three-quarters of a mile in length, to reach these quarries, which are situated on the northern edge of the mineral basin of coal district of South Wales. (Phil. Trans. 1805, p. 342.) See Swansea Canal.

CRIEBLE, in Rural Economy, a term sometimes employed provincially to signify a coarse sort of meal, which is but very little finer than bran.

CRIEBRARIA, in Botany, a genus in the class cryptogamia, and the order of fungi, formed by Schrader out of the spherocarp of Bulliard. It has for its essential character a pericarp, the upper part of which has numerous apertures, through which the seeds are ejected in the form of a powder. It contains spherocarpus trichioides, and trichioides of Bulliard, and several other species, all which are found in autumn on rotten wood.

CRIEBRATION, in Pharmacy, killing; the act of separating the finer parts of a medicine, whether dry or humid, from the groffer; the latter by means of a pulping sieve, the former by a fine fceare.

With respect to criebation, Quincy makes the following remark, in order to obviate the mischief and inconveniences which, through inadvertency or haste, frequently happen in the practical shops: which is, that whatsoever is to be powdered, the whole ingredient or ingredients, with all their parts, to be used, should pass the sieve, and be all mixed equally together before any be used. For through neglect of this caution, several medicines which come under this kind of management, will, in their different parts, be of different efficacies, according as that part of most virtue, being more or less friable, may pass through first, which will make that much too strong, or remain behind to the same prejudice. In composition likewise of ingredients of different textures or coherions, some run through much sooner than others; so that there is an absolute necessity of mixing the whole carefully after all is passed.

CRIEBIFORME, or Cribrifomum os, in Anatomy, appositions which are sometimes given to the ethmoid bone.

CRIECELASIA, formed of κρισθερί, ring, and λάσιος, I drive, among the Greeks, the exercise of rolling the circle, or τραχύς. This was a species of exercise in use among the ancients; and is, though not very distinctly, observed by Orphæus, in his Medicinal compositions, lib. vi. cap. 26. from Antyllus. It should seem to be little more than driving the hoop, as is now practised by boys. The hoop was so large as to reach as high as the breast of the person who used it: the instrument by which it was driven along was of iron, with a wooden handle; and small rings, κρισθερί, were fastened to the hoop, to jingle and divert the person who exercised himself with it; which Orphæus considers of importance. This exercise was recommended for rendering the limbs pliable, and strengthening weak nerves.

CRIECEUS, in Zoology, the name of an animal of the mole kind; the hamster of Buffon, the German marmot of Pennant, and Mus Criestus of Gmelin, which see.

CRIECH, in Geography, a varicag in the hundred of Morleyton, in the county of the Cardigans. The church stands on an eminence, and has a spire of considerable height, which makes it a conspicuous object towards every
every quarter but the N.W., in which direction the hill rises, to that high and remarkable isolated mass of lime-stone, on which the round tower or monument was erected some years ago, as a prospect-house. To the geologist, Cricht-hill presents one of the most curious and stupendous dislocations of the strata which Derbyshire perhaps any where furnishes; the mineral lime-stone here seen, forming the summit of the hill, is lifted and supported, at not less, perhaps, than 1,500 yards above the level of the same stratum surrounding it at a distance on every side. On the N.W. N. and E. sides of the monument-hill or cliff, the lime-stone rock dips in an angle of 30 or 40 degrees, and is soon covered by the chafle, grit-stone, and coal-measures, dipping almost equally flat. The town stands upon a considerable tract of the elevated lime-stone, lying nearly in a horizontal position, a friffle passing on its S.W. side, across which we pass in going towards Wirksworth, at once from the surface of the lime-stone stratum to the surface of the second grit-stone stratum, without being at first sensible of any dislocation, although the grit is naturally stricate to far above the lime.

A new angle for the draining of the Cricht-hill lead-mines is now driving from Fritchley Brook. To the southward of the town the great lime-works are situate, and kilns, from which the country S. and E. for a great way is supplied with lime, by means of the Cromford canal, from whence a rail-way branch extends up into the works. The lime here burns to a very white lime, and is highly esteemed for agricultural purposes as a manure for building and also as a flux at the several iron smelting furnaces in the neighborhood. The chafe, and a common in this parish of about 200 acres, were inclosed by act of parliament in the year 1765. Here also is a large poor-house, whose plan is worthy perhaps of imitation in other districts; several of the surrounding parishes are joined for its support, and feed their paupers hired to work and be maintained, paying a tertied sum per week for each to the general fund which is managed by trustees on the spot, who superintend the establishment, and account annually to a general meeting of the parish officers and chief inhabitants of the parishes interested. It is impossible for each small parish to have its work-house, as the law prescribes, but such are almost sure, for want of proper management, to degenerate into haunts of idleness, vice, and misery; in larger establishments persons of sufficient abilities and of character can be retained as governors and masters, &c. and order, and useful labours by such as are able, may be enforced. There are other similar establishments in Derbyshire.

Crichton, James, in Biography, who, on account of his very extraordinary talents, obtained the epithet of "The Admirable," was descended from a good family in Scotland, where he was born about the year 1577. He was educated at Perth and St. Andrew's, and made a most rapid progress in the whole circle of sciences, and was then taught and understood. Mr. Rutherford was, at that time, professor at St. Andrew's, but Crichton was not indebted to him alone for his knowledge. He was educated with James I., and had the advantage of instructions from Buchanan and other celebrated professors: to them, as well as to his own natural powers, he must have owed much, for it appears that before he was 20 years of age he had made himself master of all the sciences, and could speak and write to perfection in ten different languages. He had likewise improved himself to the highest degree in the arts of riding, dancing, and fencing, and likewise in that of playing upon almost all sorts of instruments. Thus accomplished, Crichton went on his travels, and we find him first at Paris, where he gave the most splendid proofs of his talents. He invited, by public advertisement, all those who were versed in any art or science, to dispute with him in the college of Navarre, that day six weeks, by nine of the clock in the forenoon, where he would attend, and be ready to answer whatever should be propounded to him in any art and science, and in any of the twelve languages: Hebrew, Syriac, Arabic, Greek, Latin, Spanish, French, Italian, English, Dutch, Flemish, and Scelavian; and this either in verse or prose, at the discretion of the several disputants. During this time, while the whole strength of the learned was preparing for the contest, Crichton regarded nothing but his amusements; nevertheless, when the appointed day arrived, he acquitted himself beyond all expectation, though the dispute was carried on from nine in the morning till six in the evening. The president, at length, after excluding him very highly, on account of the rare and excellent endowments bestowed on him, role from the chair, and accompanied by four of the most eminent professors of the university, gave him a diamond ring, and a handsome present of money, as a testimony of respect and esteem. Henceforward he was denominated the "Admirable Crichton." A display of a similar kind is attributed to him next at Rome, where he appeared, in the presence of the pope, many cardinals, bishops, and professors of science, and displayed such wonderful proofs of his universal knowledge, that he excited no less surprise than he had done at Paris. At Venice he conciliated the public favour by a Latin poem in praise of the city, and contracted an intimate acquaintance with several eminent literary characters. Among these was Aldus Manutius, who has borne his testimony to the extraordinary powers of Crichton, and who has asserted, that he possessed the knowledge of ten languages, as well as of all kinds of science, and all gymnastic exercises; that he had spoken with the greatest applause before the doge and Senate of Venice, and in many assemblies of learned men, who flocked from all parts to behold him, and that, in particular, he had held a solemn disputation before the university of Padua, with the most eminent professors, on a variety of topics, especially the Aristotelian philosophy. He afterwards continued a scholastic conflict for three days, against all opponents, in any form which they chose. His great reputation caused him to be chosen by the duke of Mantua, preceptor to his son Vincenzo, a disputatious youth, who was suspected of having contrived the death of his tutor. The story has been related very differently; but the following seems to be near the truth as any: One night, during the time of the Carnival, as Crichton was walking along the streets of Mantua, and playing upon his guitar, he was attacked by half a dozen people in masks: the affaihants were unable to maintain their ground against him, and the leader, who proved to be his pupil, being disarmed, pulled off his mask, and begot his own life. Crichton fell on his knees, and expressed his concern for what had happened: alleging, that he had only engaged in self-defence, and that if Crichton had any design upon his life, he might be always master of it. Then taking his own sword by the point, he presented it to the prince, who immediately seized it, and with savage fury ran him through the heart. This fatal catastrophe happened in June 1583, and excited the greatest affliction among those who were the friends and associates of the deceased. The high pretensions of Crichton have been accurately and candidly examined by the late excellent biographer Dr. Kippis, who has fixed the question with impartiality, but who denies upon good authority, that he has any thing like the claims to celebrity that have been ascribed to him. There is no doubt that he possessed uncommon dexterity of body and quickness of understanding, with a considerable degree of confidence. 40 One method," says the candid doctor, "yet remains, by which...
which we may be enabled to form a judgment of Crichton's genius, and that is, from the perusal of the four poems of his which are still extant." Thence, by the fair rule of criticism, will be found poissed of a very moderate degree of merit; they are faulty in language and profanity, and, according to another maxim, we never exclude him from the rank of the eminent and cultivated scholars of that age. These poems are to be found in the notes to the article in the Biographia Britannica. And the author of that article concludes with saying, that "it is evident that he was a youth of such lively parts as excited great preen admiration, and high expectations with regard to his future attainments. He appears to have had a fine penon, to have poissed a peculiar faculty in learning languages, to have enjoyed a remarkably quick and retentive memory, and to have excelled in a power of declamation, a fluency of speech, and a readiness of reply. His knowledge was likewise uncommon for his years, and this, in conjunction with his other qualities, enabled him to shine in public discussion. But whether his knowledge and learning were accurately professed may justly be questioned, and it may equally be doubted whether he would have attained any extraordinary degree of eminence in the literary world." Bigg, Brit.

CRICETH, or CRICAETH, in Geography, a poor borough-town of North Wales, in the county of Caernarvon, situated near the coast of the Irish sea, with a weekly market on Wednesday. It is chiefly distinguished by the ruins of a castle, placed on an eminence projecting into the sea, and presenting a fine view across the bay towards Harlech, and its once magnificent castle: 21 miles S. of Caernarvon, and 2304 N.W. of London.

CRICKET, in Entomology. See Gryllus.

Cricket is also the name of an exercise, or game, with bats and a ball.

CRICKHOWEL, in Geography, a small town, or rather village, of South Wales, in the county of Brecon, situated in a beautiful vale near the river Uf, and the line of the Brecknock and Abergroenny Canal, and principally distinguished by an ancient castle, now in ruins. The keep seems to have been a very secure building, seated upon a lofty artificial elevation: 6 miles W.N.W. from Abergroenny, 13 E.S.E. from Brecknock, and 149 W.N.W. from London.

CRICKLAD, a town of England, in the county of Wilts and hundred of Highworth; situated on the river Uf, and near to the line of the Thames and Severn Canal, and also in the line formerly marked out for the intended Thames and Avon canal. (See Canal.) Cricklade is a borough-town, but the inhabitants having been convicted of corruption before a committee of the house of commons in 1782, an act of parliament was passed to disqualify those electors who had accepted bribes, and to extend the right of voting for the future to the freeholders of the several hundreds of Highworth, Staple, Cricklade, King's-bridge, and Malmehury. It has a weekly market on Saturday: 50 miles W. of Oxford, and 832 1/2 W.N.W. of London. By the last return (14 Geo. III.) Highworth, Cricklade, and Staple contain 1723 inhabitant houses, occupied by 9999 families, and the total of inhabitants is 9587, of whom 4532 are males, and 5058 females; 6245 employed in agriculture, and 650 in trade, manufacture, or handicraft.

CRICO-ARYTENOIDEI Musculi, in Anatomy, muscles of the larynx. See Larynx.

CRICOIDEA Cartilage: from κρίς, a ring, or circle, and ἦς, form; a cartilage of a circular form, belonging to the larynx. See Larynx.

CRICO-PHARYNGEUS Musculus. Under this name are described those fibres of the inferior constrictor of the pharynx, which have their origin from the criocoid cartilage.

CRICO-THYREOIDUS Musculus; a muscle of the larynx. See Larynx.

CRI DES ARMES, or CRi D'ARMES, or CRi DE GUERRE, Fr. the cry or shout of arms, or war-hoop: an ancient custom, which is still preferred by the Turks and other uncivilized nations whenever they go into action. The French, Spaniards, English, and every nation in Europe formerly practised it. The national acclamations were Montjoie and St. Denys for the French, St. James for Spain, St. George for England, St. Malo or St. Yves for the dukes of Brittany, St. Lambert for the principality of Liege, St. Andrew for Scotland, St. Patrick for Ireland, &c. The war-hoop of the favages in America may be considered as of this nature.

Every fort of noise however is now exploded among the nations of Europe, the Turks excepted. When two armies are ready to engage, the soldiers, either for the purpose of being attentive to the word of command, and a profound silence, till it is given, prevails. And when the action once commences, nothing is heard but the noise of drums, trumpets, and cymbals, of cannon and musketry.

The French soldiers sometimes call out tue, tue, in making any desperate attack, or in charging with the bayonet, or when one battalion or squadron is directly opposed to another. And the Spaniards sometimes bawl out amat. Such exclamations or exclamations, however, are apt to lead to confusion and disorder.

CRIEFF, in Geography, a town of Scotland, in the county of Perth; 17 miles N. of Sterling, and 16 W. of Perth.

CRIEL, a small town of France, in the department of the Lower Seine; 6 miles S.W. of Eu.

CRIER, Common, an officer in the city of London, to whom, and to the faithful at arms, it belongs to summon all executioners and administrators of freemen to appear, and to bring in inventories of the personal estates of freemen, within two months after their decease; who is also to have notice of the appraisements. He is also to attend the lord-mayor on set days, and at the courts held weekly by the mayor and aldermen.

CRILLON, Louis de Berthon de, in Biography, distinguished as a military character, was born in 1541. He served at the siege of Calais at the age of 15, and afterwardssignalized himself in many battles against the Huguenots. In 1571, at the battle of Le Panto, he was wounded, but fixed upon as a knight of Malta to carry the news of the victory to the pope and the king of France. He was a great favourite with Henry III., yet scorned to do a base act at his desire. When Henry urged him to assassinate the duke of Guise, his own, as well as his sovereign's foe, the officer scorned to be concerned in so foul a deed. By Henry IV., whom he served with fidelity, he was regarded as a brother in arms, and the monarch ever designated him as the brave Crillon, and treated him with the familiarity of a friend; but never rewarded him according to his merits. Ill health obliged Crillon to retire from service, and he spent his latter days in exercises of piety and penitence. He died in his 75th year at Avignon. Many amusing and interesting anecdotes have been told of this warrior; of these we shall mention but one. Being awakened in the dead of night by the young duke of Guise, and informed that the enemy was in possession of the town, he was urged to escape, rather than to become prisoner. Crillon quietly took his arms, and declared
CRIME
clared he had rather die at his poll. When he was apprized
that it was a mere trick to try the presence of his mind; he
looked lernly at the youth, and lezting him, said, “Young
man, never affine yourself with founding the courage of a
man of character. Had I in this instance betrayed any
weakness, I would have run you through.”

CRILLON, in Geography, a small town of France, in the
department of Vaucouleurs, formerly called the Comtat Venaissin;
6 miles N.E. of Carpentras.

CRIM, Eski Crim, Crim Stepp, or Old Crim, a small
town of the Crimea, from which the whole peninsula has
probably derived its name, is situated in a fertile plain on
the ilope of a mountain, and was doubtless the Cimmerium
of the ancients. It is remarkable for numerous and exten-
sive ruins. The flit that strike the eye on coming from
Burmuduk are those of two Tartar mosques near the road,
a fountain, and the remains of a large Armenian church.
Beyond the town are some vineyards of the tockay plant.
Its modern name is Lencopitov.

The ancient palace of the Chans who refided in this place
before they removed to Bakhthifara is in a tolerable state
of preservation, and until the year 1800 the Russian bishop
of the Taurida inhabited here a very handsome and exten-
sive palace, which had been built for the empress Catha-
rine II. when she made her famous tour through the
Crimea.

The beautiful orchards which surrounded Eski Crim are
almost destroyed, and few are left of those numerous mul-
berry trees which induced prince Potemkin to establish
a nursery for rearing silk-worms and a silk manufactory near
this place. Both establishments have dwindled into no-
thing. Profeflor Pallis observes that if ever the Crimea
were peopled with colonies of Georgians and Armenians,
they would soon increase the commerce of Russia by several
hundred thousands of silk and promote other useful branches
of trade.

All the environs of Eski Crim contain traces of a formerly
considerable population. It was considered as the capital
of the country by the Genoese when they were in pos-
session of the peninsula. “Pallas’s Travels through the South-
ern Provinces of the Russian Empire,” vol. iii.

CRIMI Steppe. See NOGAI.

CRIM Tartars, or Cringkoi Tartars, a race of Tartars in-
habiting the Crimea, who, like the genuine unmingle7 Tart-
ars from whom they spring, are of a middling stature and
lean, the mouth and eyes small, the hair dark brown and
the teeth firm and white. Temperance and cleanliness form a
law of their religion, which is that of Mohammed. They are
extremely hostile. Their manners are mild and generous.
Their Kaima Chan, or commandant, is supreme judge of all
litigious matters and offences, except cases of murder; and
he pronounces without appeal on the sole authority of the
Koran. They have some difficulty to accustom themselves
to European manners and to the dominion of the Rus-
sians. Their muzras, chiefs, or nobles, generally reside in
the country.

The houses in the towns, as well as in the villages, are for
the most part of square timbers, having the interrises filled
with brick-work or with turf. The chinks and crannies are
made tight with clay and then plastered within and without.
Only the mosques, minarets, and baths are of stone, and a
few of marble. They have chimneys in the rooms, but no
fireplaces. Their dwellings are so fitted up low foyes with Turkish
coverings and cushions, or upon a clay flat raised a little
above the ground and spread with a carpet.

The residence of the chans was at Bakhthifahrai, which
is still the principal Tartar town of the Crimea.

The Tartar mountaineers of Kikenesis Limenas and Si-
mann in the south have a particular physoegomy. Their
races are uncommonly long, their noses aquiline and out
of all proportion, their heads high and flat at the sides, their
beards and hair of a clear brown, reddish, or white colour,
which is so rare in the Crimea. Their feet are ad-
marily light, and they jump from stone to stone like dancers.
Their huts are, like those of almost all the inhabitants of
the south of the peninsula from Balaklava to Aujufa,
built in general against the terraces of the rock and partly
excavated in the rock itself, having but two oblique and
transfer walls in front; the roof, which is flat, is covered
with turf, and is commonly on a level with the terrace of
the mountain, so that they can pass from the rock to the
roof. The interior of these huts contains a spacious fire
place and a tunnel for the smoke. The foxy nature of the
soil in their vicinity will not admit of their using the great
Tartarian wheeled plough; they employ a pole with a
ploughshare. To bring their wood for building and fuel down
from the mountains they make use of a particular kind of
truck called kafak, to which they fix two ozen; and their
animals, which are generally small, are of the same advantage
to them as mules, in ascending or descending the moun-
tains.

The mountain Tartars keep a few horses, which are like
.....
public rights and duties, due to the whole community, considered as a community, in its social aggregate capacity. In all cases the crime includes an injury; every public offence is also a private wrong, and somewhat more; it affects the individual, and it likewise affects the community. Accordingly, in taking cognizance of all wrongs, or unlawful acts, the law has a double view: viz. not only to redress the party injured by either relieving him to his right, if possible; or by giving him an equivalent; but also to secure to the public the benefit of society, by preventing or punishing every breach and violation of those laws, which the sovereign has thought proper to establish for the government and tranquility of the whole. See Punishment.

Military crimes and offences are, strictly speaking, those crimes and offences that are cognizable by courts martial, and are defined in the articles of War, which see. See Quar.

CRIMEA, or CRIM TARTARY, anciently the Chersonesus Taurica, a southern province of Rossia, in Europe, in the government of Taurida, between the 44° 44' and 45° 6' of northern latitude; bounded to the south-west and north-west by the Black Sea, to the east and north-east by the sea of Atheta; and joined to the continent on the north by a narrow isthmus or neck of land; whence it is also called the Crim Peninsula, or Peninsula of the Crimea. This isthmus is not above six miles in breadth from the sea of Atheta, or rather an arm of it called the Sivahl, to the Black Sea. The moat which separates the peninsula from the main land is not very wide; in the middle of it is a handsome bridge adorned with the arms of Rossia. This moat is only two miles distant from the fortresses of Perecop, called by the Tartars Or Copi, which is but an insignificant village. See Perecop.

As the whole peninsula of the Crimea is connected with the continent by the isthmus of Perecop only; professor Pallas conjectures that the Crimea was formerly detached from it and constituted a complete island; but this must have been at a time when the Black Sea had a much higher bed; and that its bed was higher is sufficiently attested by passages of the ancients. Pliny, in the fourth book of his Natural History, chap. xxvi. says: "Sed a Carcinite Taurica instipt quondam mari circumvulta et ipsa, quo nunc jacent campi; deinde valles atque jugum.

At a very ancient period this isthmus had been fortified in order to protect the peninsula from the irruptions of the Tauro-Cythians. The means of defence consisted of a wall furnished with turrets, from which the prince received the Greek name of Nea Teche, or the new wall.

The first known inhabitants of the Crime were Cimmerians, a great and martial people of the race of the Thracians. Of all their extensive possessions, which were ravished from them by the Scythians, they retained the Crimea the longest. Six hundred and sixty-five years before the Christian era they were, it seems, driven from the plain by these their stronger neighbours; but maintained their station in the mountains under the name of Taurians or mountaineers. From them the whole peninsula obtained the appellation Taurica.

In the former half of the sixth century Greeks began to settle in the Crimea. The Milesians built Panticapaeum or Bosphorus, at present called Kerch, and Theodosia, now called Cala; and an uncommonly flourishing commerce was carried on here by the Greeks. About a hundred years afterwards, the Scythians were for the most part exterminated by the Sarmates. The Taurians then extended their dominion over nearly the whole peninsula. They preyed so hard upon the empire of Bosphorus, that it submitted 122 years before the birth of Christ to the great Mithridates, king of Pontus, who, subduing the Taurians, made himself master of the whole peninsula.

In the beginning of the Christian era, the Alans forced the Bosphorian kings to pay them tribute, and drove away the Taurians. They maintained their power about one hundred and fifty years, and were succeeded by the Goths, during whose dominion Christianism was first introduced into the Crimea, in the time of Diosleian and Conflantine the Great. But the Goths in their turn were obliged to submit to the Huns, and to take refuge in the mountains, where they had their own soveraigns, who were Christians; and the kingdom of Bosphorus was entirely extinct towards the close of the fourth century.

The Hungarians who, with the Bulgarians, had conquered all the country between the Don and the Donelit, entered the Crimea in 454. The Goths and Alans went to Taman.

The descendants of the Hungarians took the name of Aoutzianians, and led a wandering life in the Crimea, but were obliged to submit to the Khayyars, who made likewise the Goths in the mountains, and the Grecian towns on the coast, their tributaries.

In the year 850, the emperor Theophilus erected a government at Cherlon, to which he subjected all the other towns of the Crimea and Cahan; for though these countries were tributary to the Khayyars, they yet acknowledged the supremacy of the Byzantine court. However, from the time that the Khayyars had first conquered the Crimea, that peninsula had taken the name of Khat or Giatyara, except the mountainous part, which was called Gothia from the Goths, and Tlfin from the remaining Alans. Jews were also numerous in the Crimea.

The Petchengers, or Kanglians, in 862, drove the Hungarians from the Crimea, and about the middle of the eleventh century were forced in their turn to fly before the Komans, otherwise called Uzes, Bytynes, Polotzes or Polouzes, who also extorted a tribute from the Greeks and Goths that were left in the Crimea. About this time the town of Soungia or Sugdya, now Sudak, rose into such consideration by its commerce, that all the Grecian possessions in the Crimea received the name of Sugdana; and in 1204, the Greeks no longer acknowledged the supremacy of the Byzantine empire. They submitted to different princes. When the Ottomans made themselves masters of the empire, there existed two principalities in the Crimea, one called Theodore, now Inkerman; and the other Gothia, now called Mangoute.

At length the Komans were subdued by the Mongoles or Tartars, in 1237, and from that time the Crime formed a province of the Kipchakian Tartar empire. The people were governed in clans by their own princes, to whom the name or title of ulutz bey, or oulough-beigh, was given, and who roamed about the plain with their hordes. The Greeks and Goths paid tribute to the Mongoles, as they had before done to the Komans.

In the beginning of the Tartar dominion, a number of Teher, Caffes, or Circassians, established themselves in the Crimea in 1333, and Kerch was governed by a prince of that nation. While they were masters of Conflantineople, the Latins, and especially the Venetians, carried on a very important commerce with the Crime and Taman. But, in later times, the Genoese appropriated it exclusively to themselves, and, in the bloody wars which ensued in consequence, they often gained the superiority. By permission of the Mongoles they rebuilt
rebuild Caffa, and made that town the centre of their commerce. They conquered Sidak and Cemhalo, now called Balaklava. They paid duties and imposts to the Mongols, and in this they were in full force: but when the horses were not delivered by the Tartars, they bid them defiance, and even the princes of the Tartars were frequently excited and depopulated at the defection of the Genoese. It was at this period that the trade from India to the Crimea was divided into two branches; one over the Amoor, the Caspian Sea, and through Astrakhan to Tana; the other by the way of Bagdad and Tauris to Trebizond and Servopolis. Tana belonged to both the Genoese and the Venetians, but under Mongolian supremacy.

In 1441, the Crimea was formed into a separate Chanate, under the dominion of the Tartars; and the Chans were descendants from the house of Tschinghi Khan. The proper founder of the Tartar Crimean state was Mengly Ghery, a descendant of the Tschinghis. While yet very young, he had been taken prisoner in an engagement by the Genoese, who cau$ed him to be well educated, and in all respects treated like a prince. On being driven to extremities by the Tartars, young Mengly was sent with some of the principal Genoese to Constaninople, for the purpose of moving Mohammed II. to take them under his protection. The sultan showed great affection to Mengly, and when the Tartars petitioned Mohammed to give them a Chan of their own, he appointed this young prince, who, in return, acknowledged the supremacy of the Porte. This state of dependence not proving agreeable to the Tartars, Mengly, not long after his arrival in the Crimea, was obliged to apply for assistance to the Turks, with which he not only reduced the Tartars to obedience in 1455, but even annihilated the Genoese authority in the peninsula. Elated with his conquests, Mengly was thinking of withdrawing himself entirely from the supremacy of the Porte, when the Turks sent garrisons to the principal towns of the Crimea, and reduced the Chan to a dependence, which, particularly from the year 1584, sunk into a complete subjection. Not contented with keeping strong garrisons in the forts of the Crimea, and setting up and depopulating the Chans at pleasure, the Turks shut up the entrance of the Black Sea, to other nations, and completely ruined the commerce of the peninsula.

Under the suflere despotism of the Turks, the Crimea continued till the year 1774, when the emperors of Russia, Catherine II., by the peace of Kutchuk Kainardji, procured the independence of the Chan of Crime Tartary; and obtained for the Russian empire some strong places on the frontiers as a safeguard against the predatory incursions of the Tartars.

But this pretended independence of the Crimea created new troubles. Sahim Ghery, the Chon who had been placed over the Tartars of that peninsula by the power and influence of Russia, made a more ostentatious display of his attachment and even vaflalage, than was suited either to his character as Chon, or to that of the people whom he governed. They had always considered liberty as the most invaluable of human blessings, and preferred a connection with the Ottomans with whom they had been so long united, who were of the same religion, and in conjunction with whom they had shared so much glory and spoil in war, to their new alliance with a Christian nation which they had been in the habit of regarding either with enmity or with contempt. Their discontent broke out in 1781. They elected a new Chon. A civil war ensued. Sahim Ghery was murdered. Russia sent her forces into the Crimea to support him against the rebels. The Russians defeated the Ulusper, and obliged him to abandon the peninsula. His adherents were either dispersed or subdued. In 1783, Sahim Ghery abdicated his power and transferred it to Russia, and in the beginning of the year 1784, by a treaty signed at Constaninople between the Russian plenipotentiary Bulgakoff, and the ministers of the Grand Signior, Russia retained the sovereignty of the Crimea, of the isle of Taman, and a great part of the Cuban. In 1787, the emperors visited her new provinces, where she was met by the emperor Joseph II. of Germany. But the unfortunate Sahim Ghery was no longer in the Crimea. He had been dragged from the place of his retreat in Moldavia to the island of Rhodes, and was assassinated by the Turks in the house of the French consul, where he had taken refuge.

The principal remains of antique monuments are found in the south-west angle of the peninsula around Servopolis, or Akkia, which is true classic ground. The whole of this angle, which is intersected on one side by the port of Akkiar, and on the other by that of Basiklava, was formerly called the Heracleotic Chersonesus, from some Greek colonists that came from the town of Heraclia, in Asia Minor. It forms exactly, as Strabo observes, a large cape or promontory. "In littore, quater seu navigatore, meridiem versus exiguum terram promontorium, continentem portum, portio totius peninsulae in eum locum, in urbem, ad urbem, "Hence, probably, does not reckon the round bay, which is not so convenient for a port. The next to that of Akkia, and at the same time the smallest of these bays, to the exit of which is the town of Korfun, or Chersonesus, is also, at the present time, called by the Tartars Tshorthun, and by the Russians Karantinnyaya Bukta, on account of quarantine being performed at this place.

Vestiges of antiquity are scattered in every direction over the whole Heracleotic Chersonesus; but there are no traces of old buildings, except in the vicinity of the monastery of St. George, along the southern coast, where are three remains of a wall and some square and round towers, which probably indicate the place on which stood the wall that, according to Strabo, formerly inclosed the Chersonesus from the port of Balaklava to that of Akkia to the extent of forty furlongs, or eight versts. "Cum autem hic (Styra) et murmum quo intercelatus erat illius ad Ctenumem aggeredenturus, ingens et calamus fossam implevit; regii quantum ab haerei interiu quae ponte facto fratum fuerat, noctu incendentur." There is, however, no longer any vestige of a ditch.

Not far from thence are the remains of a singular building which professor Pallus supposes to have been the Fanum Demonis Virginis mentioned by Strabo. There are also several frames of stone, in a circular form, which Mr. Pallus takes for the ancient tombs of the Cherfonites.

The most remarkable district, however, of the Cherfonesus, in point of antiquity, is the remotest part of the tongue of land called Fanary, which, in some maps, is erroneously designated Cape Pamar; and there is every reason for supposing it to be the ancient Chersonesus of Strabo. "Inter urbs,
CRIMEA.

urban, (the new Chersonesus) et promontorium (Parthenium) portus fact tres; sequitur vetufla Chersonesus, diruta, et post hanc portus angulo introitu; portus fymbolorum dictus." Therefore, the situation of the ancient town must have been between the latter bay and Balakhava, the port of which was Symbolon, which the Genoese called Cemmalo. Ruins of fortifications, and foundations of large buildings are numerous here. But the light-horn, at the corner of the most advanced western point, appears to have been a modern building, and either the work of the Genoese or the new Chersonesites. The name of Fanary (lanthorn), sufficiently indicates that this tower was used as a pharos, from whence the whole cape has derived its name.

The ruins of the new town of Chersonesus, which flourished in the time of Strabo, are seen near Atkiar. Mr. Pallas found a fine inscription on white marble, relating to the repairs which the fortresses underwent in the reign of the emperor Zeno. Broken columns, sculptured marble, and copper and silver coins of the reigns of Gordiansus, Aurelius, Aurelius, Contantine, and even Augurstus, are frequently found, together with remains of enamel and common glafs; but gold coins are scarce.

Another very remarkable piece of antiquity, but of a later date, is the ancient fortress of Inkerman, situated at the extremity of the bay of Atkiar, with some very curious caverns; which town formed in his "Philosophical and Political History of the Commerce and Navigation of the most ancient Colonies in the Black Sea," published at Venice in 1789, supposes to have been the Genus of the ancients. But the caverns appear to be the work of the monks, under the emperors of the middle age. Similar cells are observed in other parts of the Crimea.

When Russia obtained possession of the Crimea, the following countries were considered as forming part of the peninsula, viz. the caft and west Nogaik Tartary between the Dnieper and the Berda, which the Russians call the Crim Stepe; an extensive tract of Bessarabia between the Daciter and the Danube, the Black Sea, and Moldavia, called the Budgik; the Cuban or eastermost part of the continent, and the isle of Taman. But the Crimea itself has only 235 English miles in circuit, and its extent does not exceed 1,424 English square miles. Its climate is mild. Its temperature unequal, but favourable, the summer being tempered by frequent winds; and the winter having rarely more than three consecutive days of severe frost, which never exceeds the tenth degree. Reaumur's thermometer is the highest.

Three fourths of the peninsula to the north form an undulated plain, the soil of which varies very much. At its superficials, and in its greatest extent, but particularly at the angle between Perekop and Kolfo, it consists of sand combined with clay. In the vicinity of the salt lakes it is of an argillaceous quality.

The whole country from Perekop to the river Salgif abounds with salt marshes and lakes, from whence the neighbouring Russian governments, as well as the Crime itself, Anatolia, and Bessarabia, are supplied with salt. Caffa alone used to export 200 cargoes annually.

The Crimea may be divided into the flat country and the mountainous. The former, which extends from Perekop to Kolfo, and from the river Bulganack to Karaubazar, Caffa, and Yenikali, is sprinkled with a number of small Tartar villages; which however, have been greatly defected since Russia acquired the country. The care which the Tartars take in their towns and villages, to procure water from the heights at a distance, cannot be too highly commended. They employ tunnels of clay, which run under ground into

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the
the Russians, on account of its excellent harbour. Caffa or Theodosia and Kertch are reckoned the next best ports.

The peninsula of the Crimea was formerly extremely populous; but the long troubles which preceded its secession to the Russian empire, have caused numbers of Turks, Jews, Greeks, and Armenians, to emigrate; and the Tartars have fixed their abode in such numbers, that M. T. Coke rates the population of the Crimea, in 1782, at only 50,000 individuals, whole numbers, as it appears from later accounts, have not been considerably increased. Coke's View of the Russian Empire, vol. ii. Life of Catherine II. 2d edition. 1798, vol. ii. Voyage en Crimée, Paris, 1782. P. S. Pallu's Travels through the Southern Provinces of the Russian Empire, vol. iii. Narrative of A. Saphir's (Lady Craven's) Journey through the Crimea to Constantinople, 1789.

CRIMEA. a town in Germany, in the circle of Upper Saxony, and territory of Neumark: 5 miles N. of Weyda.

CRIMEA. in Law, See PAGE.

CRIMEA. in Geography, the extremity of a point of land in Plymouth-fock, in Cornwall. The exact situation of the obelisk was determined, in the government trigonométrical survey in 1795, by an observation from Dartmouth station, distant 66,776 feet, and bearing $7^2^5'$ $4^9^0'$ N. E. from the parallel to the meridian of Dartmouth; and another from Kurrill, distant 63,803 feet: whence is deduced its latitude $5^5^9^0'15.8^0$, and longitude $4^2^3^0'5^3^5^0$, or $16^5^9^0'3^7^5^0$ W. of Greenwich.

CRIMINAL CONVERSATION, in Law, is used as synonymous with adultery.

CRIMINAL. Law, is that which discourses the nature of crimes, and inflicts suitable penalties; or, as it is more usually denominate in England, the doctrine of the Feas of the crown; which fee. For the method of pronouncing capital sentence on criminals in the county of Bar, see BERN.

From an account, just now printed, of the number of criminals executed in the city of London and county of Middlesex, from the year 1749 to the year 1805 inclusive, shewing the proportion in each five years, and diluting the years of war from years of peace, it appears, that during the seven years of peace which preceded the war of 1756, the number of criminals, executed in the city of London and county of Middlesex, was very considerable, being on an average $42$ a year;—in the seven years of war which succeeded, they were reduced to about $13$ a year;—in the seven years which followed the peace of 1762, the number again increased, but not to more than $28$ a year, an average;—in the seven years which followed, from the year 1770 to 1776 inclusive, which was likewise a period of peace, the number further increased to $38$ a year;—from the year 1776 to the year 1783, a period of war, first with America, and afterwards successively with France, Spain, and Holland, the number, instead of decreasing as in the former war, still further increased, the average being, during these five years, about $59$ a year;—from the year 1783 to the year 1793, a period of peace, the average continued increasing to $54$ a year, and the years 1795 and 1787 were great beyond all former example: from 1793, the year in which the existing police establishment was first instituted, to the present period, the numbers appear to have progressively diminished; till within the last four years the average has not been $12$ a year. This period has, with the exception of one intervening year of peace, been a period of war; but during that year, though the militia was disbanded, some part of the army, and a considerable part of the navy, reduced, the number of capital convicts does not appear to have increased. The example of the American war, and of the year 1802, are sufficient to prove that the increase of capital offences cannot be traced exclusively or even principally to the different operations of war or peace; though it is natural to suppose that the first may have some effect in diminishing, and the latter in increasing, the number of these crimes.

From an account of the number of criminals executed in the city of London and county of Middlesex, between January 1, 1749, and December 31, 1766, shewing the various crimes of which they were convicted, it appears, that the whole number amounted, within this period, to 728:—that the number of murders, from the year 1751 to the present period (1808), have remained nearly the same; but that they were considerably more upon an average, in the 20 years preceding:—and that a most important change has taken place respecting the crimes of burglary and highway robbery; these offences in their aggravate character, in which it is found necessary to apply capital punishment to them, having nearly disappeared, within the county of Middlesex. From other statements it appears, that the number of prisoners committed to Newgate during the last six years (from 1804 to 1807 inclusive), charged with criminal offences of various kinds in the cities of London and Westminster, and county of Middlesex, amounted to 617, of whom 429, or $15$% females: the total of persons executed in these six years includes 61 males, 7 for murder and 16 for forgery, and 3 females.

From an account of the number of criminal offenders, committed to the several gaols of England and Wales for trial, in the years 1805 and 1806, it appears that in the former year were committed 3167 males and 1326 females, and in the latter year 3120 males and 1226 females: and in the former year 350 received sentence of death, and 82 were executed; and in the latter, 325 were sentenced to die, of whom 57 were executed. From an account distinguishing the commitments in each county, it appears that the number of offenders in the county of Middlesex amounts to more than one fourth of the whole; and that the number, in proportion to the population, in the counties most contiguous to London, is nearly double the number of the same population in the more remote counties.

It appears likewise, that the northern counties possess a very great advantage, both with respect to the small number of offenders and paupers, when compared with the rest of England. This observation applies, not only to the counties within the northern circuit, but likewise as far as relates to paupers generally, to all the more northern counties. The counties of Lincoln, Nottingham, Derby, and Rutland, the most northern counties in the midland circuit, and those of Staffordshire and Shropshire, the most northern in the Oxford circuit, appear to be, in this respect, in the same comparatively favourable situation as the counties within the northern circuit, when compared with the other more southern counties of England, Middlesex, Monmouth, and Cornwall alone excepted.

CRIMIS, or CRIMISSA, in Ancient Geography, a promontory of Italy, in the country of the Etini.—Allo, a town of Italy, in the same country, situated on the foregoing promontory, before Crotona and Thurium, and said to have been founded by Pelasgus. It is now Cori.

CRIMISUS, or CRIMISSUS, a river of Italy, in the country of the Salentini, whose mouth was in the gulf of Crotona.—Allo, a river of Sicilv, which discharged itself into the Hysus. This river was famous among the ancients for its god, who, in the shape of a dog, was supposed to guard the Elysian region.
CRIMMITSCHAU, in Geography, a small town of Saxony, on the river Pleisse, in the circle of the Erzgebirge, famous for its woollen and cotton manufactures, concluded on the English plan, and provided with excellent machinery. The chief scale of these manufactures is at Leipzig, but great quantities are also exported immediately from Crimmitschau to Russia, Poland, Turkey, Italy, Spain, and Portugal.

CRIMNOIDES, or CRIMMOIDES, formed of sjumus, linen, in Medical Writings, is used for urine with thick sediments at the bottom, like bran.

CRIMSON, in Dyeing, is produced by various processes according to the nature of the substance employed, and the kind of liquor designed to receive the colour. Wool and silk are dyed either with cochineal or Brazil; with the former, the colour is more fixed and permanent, and is called the true or permanent crimson, which gives a fine colour, but does not resist the action of the sun and air so well.

All the processes for dyeing wool crimson with cochineal may be reduced to two. Either the shade desired is given to cloth previously dyed scarlet, or the cloth is dyed crimson at once.

The natural colour of cochineal is crimson, and it affords this colour both with alum and the solution of tin, when its effects are not modified by the action of tartar, as has been shown by Bancroft. When cloth therefore that has been dyed scarlet in the usual way is boiled in a solution of alum, the natural hue of the cochineal is restored, and the cloth becomes crimson. Alum, salts with earthy bodies in general, the fixed and volatile alkalies all effect this change; the quantity necessary to produce any determinate shade, varies considerably with the nature of the water employed. Some which is loaded with earthy salts will answer the purpose without the addition of alum, or any other substance whatever.

Hellot tried soap, soda, and potash; all these substances produced the colour desired, but saddened it and gave it less lustre than when alum was employed. Ammonia, on the contrary, produced a very good effect; but it evaporates quickly from the bath and requires a considerable quantity. Hellot replaced the use of it, by adding equal quantities of muriate of ammonia, or common sal ammoniac, and potash; the ammonia was disengaged in the bath, and in this way the cloth instantly took a very bright colour. He affirms that the colour is so much heightened as to render less cochineal necessary. Mr. Poerner has given nearly the same process. He directs the cloth to be boiled an hour in a solution of common salt, in the proportion of 24 ounces to 1 lb. of wool, and to let the cloth remain in it 24 hours after it is become cool. A bath is prepared with 1 ounce of cochineal, 2 drams (gross) of tartar, and 2 ounces of solution of tin for every pound of cloth, and in this it is boiled one hour. When washed it is steeped in a vat, in which equal quantities of sal ammoniac and potash, in the proportion of 6 drams to a pound of cloth, have been previously diffused; it is said to remain here 24 hours, frequently turning and moving it in the liquor. It is afterwards taken out and washed. The colour is a reddish crimson inclining to blue.

This mode of producing crimson by the action of alkalies or alum, is generally resorted to when cloth dyed scarlet has been mangled or spotted by accident. These defects are thus remedied or rendered less glaring. Muriate of soda, or common salt, has also the property of converting scarlet to crimson, and has long been used for this purpose in Languedoc, according to the testimony of Hellot.

To dye crimson at once, a solution of two ounces and a half of alum, and an ounce and a half of tartar to every pound of cloth, is used for the boiling; the cloth is afterwards dyed with 1 ounce of cochineal. Solution of tin is commonly added, but in less proportion than for scarlet. The process employed varies greatly according to the finds required, as deeper or lighter, or more or less removed from scarlet. Some use common salt for the boiling.

Mr. Poerner directs the boiling to be made with 3 ounces of common salt and 1 3/4 of alum, to 1 pound of cloth, and after suffering it to remain 24 hours in the solution after cooling, to boil one hour in a bath composed of 1 ounce of cochineal, 2 drams of tartar, and 2 ounces of solution of tin. The cloth takes a reddish crimson.

A bright reddish crimson of very agreeable hue may be obtained by boiling 1 lb. of cloth a full hour in a bath prepared with 34 ounces of alum, 1 ounce of tartar, and 2 ounces of solution of tin. When boiled an hour and a half in a bath composed of 1 ounce of cochineal only, without any other ingredient, if this cloth be steeped 24 hours in a cold solution of 1 1/2 ounce of sal ammoniac, and 1 ounce of potash in 20 lbs. of water, the colour becomes deeper, and another shade of crimson is by this means obtained.

Archil and potash are frequently used for fading crimson, and giving them more bloom, but the hue thus imported from vanishes.

The boiling for crimson is sometimes made after a scarlet dyeing, by adding alum and tartar to the bath, and some particular shades of crimson are said to possess more bloom when dyed this way, than when fresh baths are used.

Crimsons in half grain are sometimes dyed by substituting madder for half the quantity of the cochineal, following in general the same processes as for the grain crimson. Other proportions of madder may be used instead of half, according to the effect required.

The colour produced by Brazil is not so permanent on wool as cochineal, it is nevertheless employed. The cloth is boiled in a solution of alum, to which a fourth of its weight, or even less of tartar is added. A greater proportion of tartar inclines the colour too much to the scarlet or yellow hue.

The cloth thus impregnated should remain several days in a cool place; after which it is dyed by boiling it in Brazil liquor. The colouring matter which is deposited does not yield to the colour, the worst goods should therefore be paled through the bath first, and afterwards the finer ones. In this way a colour is obtained which funds the action of the air tolerably well.

Mr. Poerner directs 1 lb. of cloth prepared with 1 1/2 ounces of alum, and 1 ounce of tartar, to be boiled one hour in a bath containing 6 ounces of Brazil, and 6 ounces of alum. The cloth acquires a deep brick red. When steeped 24 hours in a cold solution of potash, it becomes a fine reddish crimson. By preparing the cloth with alum and tartar, Mr. Poerner observes that very good and useful colours may be obtained from Brazil, which are deeper and richer than those obtained on cloth prepared with alum, tartar, and solution of tin, or with tartar and solution of tin without alum. By varying the proportion of the ingredients made more by the action of pitch and sal ammoniac, these shades of crimson may be greatly modified. Colours obtai-
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red from Brazil may thus be rendered tolerably permanent, yet they are not comparable in this respect with those obtained from coccinial or madder. A bloom is sometimes given to madder colours by passing them through a decoction of Brazil, but this slight tinge soon fades and perishes.

Mr. Guthrie gives a process, by which he pretends that fine and more permanent colours are obtained than by those in general use. He directs pure vinegar, or aceto-citric acid, or aqua regia, to be poured on Brazil dried or chopped, till it is covered with the liquor; the mixture to be well shaken, then left to settle for 24 hours, after which it must be decanted, filtered, and kept for use. On the residuum, fresh water or vegetable acid is to be poured, and this to be repeated till all the colouring matter is extracted, when the wood will be found to be black. All these liquors are then to be mixed together for use.

The stuff having been prepared with a slight galling of fumac, or white galls, is slightly aluminated. After aluminating, it is entered wet into a bath prepared as follows: Some of the acid solution of Brazil is diluted with water proportionate to the quantity of stuff, or the shade of colour to be given. When this is so hot that the hand will just bear it, solution of tin is poured in till it is of a fine colour; it is then stirred and the stuff entered. In half an hour it is taken out and washed. The remainder of the bath may be used for lighter shades, but those stuffs only must be galled that are for deep ones. The aceto-citric acid, as it is called by Derchollet, is a liquor of which Mr. Guthrie makes great use in dyeing under the name of vegetable acid spirit, which he prepares in the following manner: He takes any quantity of lemons; those of the rind is rotten will do, removes the peel and the skin that adheres to it, and this into a vessel, which should not be made of wood. He sprinkles with a quantity of good vinegar, and then squeezes out the liquor through a flannel by means of a press, and filters the expressed liquor through paper. It may be used with success in this state, but it is apt to grow cloudy and the acid is watery. In order therefore that it may keep, and not dilute the baths into which it is put, he directs it to be purified and concentrated as follows: The liquor is to be exposed to the sun till a sediment forms and it becomes clear, it is then to be filtered and distilled on the usual bath. The receiver is to be changed when the liquor that drops becomes acid, and the distillation continued till oily streaks are perceptible in the neck of the retort.

The acid found in the receiver is to be kept for use.

On the foregoing processes for obtaining aceto-citric acid, we shall observe that if the acid be used in its recent state, as expressed from the lemons, it is indeed a mixture of citric and acetic acid, but the rectified and concentrated spirit of Mr. Guthrie is, after all, nothing but distilled vinegar. Citric acid will not rise in distillation; it may be decomposed by heat, but cannot be driven on like acetic acid; this process of distillation is therefore a separation of the acid of the lemons from the vinegar they were sprinkled with, and proves the impurity of one of the ingredients at least of this composition. Of the efficacy of galls in rendering the colouring matter of Brazil more permanent there can be little doubt, but it has a tendency to dye the colour, and it is with reason, that Mr. Guthrie observes that the gallings should be employed only for the deeper shades.

Silk acquires from coccinial a colour which is distinguished from the false crimson obtained by means of Brazil.

Silk intended for coccinial crimson ought not to be bleached with more than 20 lb. of soap to 100 lb. of silk, as the yellow cast which silk has when imperfectly scoured is favourable to this colour. It is sometimes imparted to it by a slight tinge of anacotta, when white silk is to be dyed crimson.

When the silk is well cleansed from the soap by washing, it is soaked in a strong solution of alum, in which it is generally left all night, and next day is wrung, washed, and twice beatled at the river.

The bath is prepared as follows: Into the dyeing vessel, half, or twothirds filled with boiling water, from one to two ounces of pounded white galls are thrown in for every pound of silk. After boiling a few minutes, two ounces of cochinol or more, according to the strength of the shade required, are added for every pound of silk, and for every pound of cocinnial, one ounce of tartar. When this is dissolved, an equal weight of the solution of tin is added; the ingredients are all well stirred, and the bath filled up with cold water. The proportion is generally about eight or ten quarts to every pound of silk. In this the silk is entered and worked till it appears quite uniform in colour; the fire is then increased, and the bath made to boil two hours, turning the silk from time to time. The fire is then withdrawn, and the silk left in the bath a few hours longer. It is then washed at the river, twice beatled, wrung, and dried. The solution of tin for this process ought to contain more tin than is used in the composition for scarlet; otherwise the colour is too bright, and not sufficiently full and deep. Macquer directs the solution to be made with one pound of nitric acid, two ounces of sal ammoniac, two ounces of tin, and twelve of water.

If the colour is to be faded, the silk after washing is passed through a solution of sulphate of iron, more or less strong, according to the shade required; the solution should have a tinge of yellow, a greater or less proportion of the decoction of oakum must be added to the solution.

White galls are preferred, because the black or blue galls deform the colour of the coccinial; and even white, when used in too great a quantity, dull the crimson very much. Macquer pretends that the galls serve only to increase the weight of the silk; their general effect, however, is to give greater permanency to the colours, and in crumpling of the deeper shades their use is indispensible.

The quantity of solution of tin employed in the foregoing process is very small. If used in the bath in the same proportion as for dyeing wool scarlet, the silk would lose its lustre, and acquire but a faint colour. Macquer and Scheffer have however each published processes for dyeing silk rose or poppy colour, which differ only in a few particulars from the ordinary mode of dyeing scarlet; the solution of tin being employed only to avoid its strong action on the silk.

In the process which Macquer published in 1768, the solution is prepared by adding three ounces of tin by little at a time, to a mixture of four ounces of nitric acid, and two of muriatic acids. When the solution is finished, 6 lbs. of silk that have already had a flight ground of anacotta, are immered, and remain in it half an hour. It is then wrung and washed till it no longer renders the water turbid. It is dyed with four ounces of coccinial, and one ounce of tartar, for every pound of silk. These are boiled up in water, and afterward cooled down till the hand can bear the heat. The silk is then entered, and the fire increased; after boiling one minute it is withdrawn and washed. By this process the silk has acquired an increase of one fourth of its weight. Its colour results fair, and is much more permanent than that which Cathamas affords.

In 1751, Scheffer published a description of the following process. He dissolved one ounce of tin in a mixture of four
four ounces of nitric acid, and one of common salt. The solution was diluted with twice its quantity of water, and the silk steeped in it 24 hours. When withdrawn, it was washed till the water no longer appeared milky, and dried with four fifths of its weight of cochineal in a small quantity of water. The bath retains a considerable portion of colouring matter which may serve for dyeing silk a lighter shade, or even for dyeing crimson by the ordinary processes. It may be used also for dyeing wool.

Scheffer describes the following varieties of his process for obtaining different shades. If the silk be wrung out of the solution of tin, left all night in a cold solution of one ounce of alum in a quart of water, wrung, dried, washed, and afterwards dyed with cochineal, it will take only a pale poppy colour. If the silk be steeped twelve hours in the solution of tin diluted with eight parts of water, and then left all night in the solution of alum, washed, dried, and passed through two baths of cochineal as before, adding to the second bath a little sulphuric acid, the colour will be a fine poppy red.

In the experiments made by Berthollet on this subject, the solution of tin, which answered best for dyeing silk, is that which he has directed for the scarlet dye, and is made by dissolving slowly in one pound of nitric acid, two ounces of tin, and two ounces of sal ammoniac: the fact to be dissolved first, and the tin added afterwards in small portions at a time, stirring it frequently to incorporate the solution fully. When finished and decanted from the black sediment which is deposited, it is diluted with one fourth of its weight of water. The nitric acid employed should be of the strength of 30° of the hydrometer of Beauce, which corresponds with a specific gravity of about 1.26.

Solutions containing a greater proportion of tin gave deeper shades. The colour obtained by the above, was a fine cherry colour sufficiently bright.

Brazil wood is used for dyeing silk what is called false crimson, to distinguish it from that produced by means of cochineal, or grain crimson, which is much more permanent. Vinegar is used to distinguish the true colour from the false, but this proof is fallacious, since the Brazil crimson dyed with the solution of tin, retains the action of vinegar like cochineal, though that dyed with alum does not.

Silk intended for this crimson, should be boiled with spot in the proportion of twenty pounds to a hundred of silk, and afterwards alumined. Left alum is required for this than for grain crimson. After rinsing in the river, it is passed through a bath more or less charged with the decoction of Brazil according to the shade required. If water, free from earthy faults, be used, the colour is too red for crimson; the proper hue is given to it by passing the silk through a flight of alkaline solution, or by adding a little alkali to the bath.

Working the silk in hard water till it has acquired the proper shade, will answer the same purpose.

Logwood liquor may be added to the Brazil, to deepen the shade of crimson, and a little alkali used with it also when the shade desired requires it.

There is the same objection to the use of the solution of tin in dyeing silk crimson with Brazil as with cochineal; silk has not the powerful attraction for the colouring matter combined with tin that wool has; the greater part therefore separates and contracts no union with the stuff. Bergman, however, remarks that the colours imparted to silk by different dye woods, may be much improved by steeping the silk in a cold solution of tin. A strong decoction of Brazil wood, says he, gives to yellow silk prepared in this way a scarlet colour inferior indeed to that of cochineal, but finer and more permanent than if it be steeped in alum only, and as capable of standing the proof by vinegar as crimson or poppy in grain. Mr. Gohiche describes a process, in which he uses solution of tin in the bath to give silk a fire colour. He directs the silk to be galled with a solution of galls in white wine, affecting that an alriment solution thus made preserves the brightness required in silks much better than one prepared with water. With this solution he mixes water till it has acquired a yellow colour, and impregnates the silk well with it, leaving it to steep cold for several hours. He then pours out the liquor strongly, but without rinsing the silk which it dries, and afterwards soaks for twelve hours in a solution of alum, containing four ounces for every pound of silk. The silk taken out from the alum water is wrung, and entered wet into a bath of Brazil, after adding to it an ounce of solution of tin. The remainder of the bath may be exhausted for lighter shades. If the colour be required more approaching to orange, the silk is not to be galled, but to be alumined cold with two ounces of alum to the pound of silk, after which it must be dyed orange with annatto, without boiling, and before it dries dyed in the Brazil bath. The author concedes that these colours, particularly the latter, are not very permanent. For role colours he advises the galls to be omitted, and for alumining uses only two ounces of alum to the pound of silk. For light shades he recommends the solution of alum to be decanted from the sediment that may have been deposited, and prefers drying them cold, using a bath richer in colour. The silk is to be taken out as soon as it has acquired the proper tint, and the bath may be exhausted for other shades. With these precautions it allows us, that fine colours of tolerable permanency may be obtained.

The crimson imported to cotton or linen by cochineal and Brazil, has little hold, and is on that account but little used, more especially as madder imparts to these substances, properly prepared, one of the most beautiful and permanent colours which the art of dyeing can produce.

As this however is not the place in which to enter into a detail of the operations of the Turkey or Adrianople red, which we purpose to treat at large under another head, we shall give some account of the processes that have been practised with more or less success for producing a fine crimson colour upon cotton by means of cochineal and Brazil.

Mr. Poerner has made many experiments with different dordands, as alum, solution of tin, sal ammoniac, potash &c. for dyeing cotton with Brazil, used either in the Lath or in the preparation of the cotton. He could not produce a colour, however, that would stand washing with soap, though some would stand the action of the air and washing with simple water very well. He recommends cotton thus dyed, to be dried in the flake.

Mr. Berthollet received from Mr. Brown the following process for dyeing cotton a crimson colour, which is used by some manufacturers.

A solution of tin is prepared in the proportion of nitric acid two pounds, muriatic acid one pound, tin eight ounces and water one pound. The liquids being well mixed, the tin is added by little and little. For a piece of cotton velvet weighing fifteen or sixteen pounds, a lath is prepared containing boiling water four parts, strong decoctions of galls two parts. Having raked up the bath, the piece is entered and worked for half an hour, and left to soak two hours, when it is taken out and left to drain. Another bath prepared with three buckets of boiling water, and one of decoction of Brazil wood, also boiling, is to be raked up and the piece worked in it an hour. This bath is to be thrown away, the vessel washed out and then filled with a pure decoction.
Crimson is an artificial dye made from the flowers of the madder plant. The process involves steeping the flowers in a solution of tin or lead, followed by boiling with a mixture of alum, mordant, and an acid. This results in a red dye that can be applied to various materials.

The dyeing process is as follows:

1. Soak the madder flowers in water for several days to release the dye.
2. Place the soaked flowers in a solution of tin or lead, depending on the desired shade.
3. Boil the mixture to extract the dye completely.
4. Add a solution of alum and mordant to the tin or lead solution.
5. Apply the dyed solution to the fabric or material.
6. Apply a protective layer of alum to prevent the dye from fading.

Crimson is a strong and permanent dye, making it suitable for high-quality textiles and garments. It is often used for ceremonial and formal wear, as it holds its color well over time. However, it is also prone to fading under direct sunlight or exposure to harsh chemicals, which is why it is important to handle the dyed materials with care.
colour a crimson hue of no great lustre, but very permanent.

The following process by Mr. Goul, affords a colour of less intensity indeed, and solility, but scarcely inferior in beauty, to the Adriaipple red.

Prepare a mordant by dissolving 4 lbs. of acetic acid, and 4 lbs. of alum in a gallon of pure water, and after decanting the supernatant clear solution from the precipitate which forms, thicken it with gum to the consistency required. If the work requires the mordant to be figured, add a little infusion of cypress till it is sufficiently thinned to enable the preparer to obtain the desired effect. Lick the work, hang it up, and then after four or six days after printing, bring it to a warm place, to facilitate the liberation of the acid; rinse five minutes in a copper of water at 120°, with two good spade-fulls of cow dung, after which wash and rinse them in clean water several hours, alternately winching, washing, and suffering them to sleep in the river. Lastly, which five minutes in a clean hot water copper at 120°, and after rinsing and washing again in the river, dye them as follows. Into a dye copper of 500 gallons capacity three parts filled with clean water, free from all accidental impurities, and not discoloured either by rain or floods, put 20 lbs. of the bell crop madder, and 60 lbs. of good sweet bran. Mix well, and bring them up quickly to a boil, and keep them in a flat of ebullition 20 minutes. Add cold water sufficient to take the copper off the boil, then enter two pieces, winching them briskly and keeping them down with the copper flick the whole time they are in. Bring the copper up to a boil again, and in 8 or 10 minutes, according as the shade required, the goods will have acquired their full colour. Enter two more pieces after these are withdrawn, and keep them in a few minutes longer; they will be scarcely inferior to the former, but as the copper becomes exhausted, every succeeding set will acquire less colouring matter than the preceding, and if the operation be continued upon several sets without refreshing the copper, the latter will acquire only a pale but delicate rose colour. If the whole are required to be full deep colours, the copper must be supplied with a regular charge of bran and madder after every second set, but to exhaust the bath fully, and proceed with due regard to economy, the strong colours should be dyed first, and the pale and more delicate shades afterwards.

Wash them well after dyeing, and brin them at a boil. The colour improves much by this last operation, which may be repeated on the stronger shades till the colour has acquired its proper hue, and the whites are good. See Madder.

**Crimson-Grass Veteh, in Botany. See Lathyrus Ny. folia.**

**CRINAN Loch, in Geography, is a branch from the Sound of Jura, in Argyllshire, in Scotland, connecting with Craigaff Loch, and terminating at the west end of the Crinan canal; the town of Glascow is situate not far from its southern shore.**

**CRINAN Canal:** a short canal of very large dimensions, for the passage of ships between Loch Crinan and Loch Fyne, when coming or going northward to or from the Clyde river, by which a very circuitous navigation round the mouth of Cardire is avoided. See CANAL.

**CRINED,** in Heraldry, a term denoting that the hair of the head of a man or woman, or the mane of a horse, unicorn, &c. is represented.

**CRINGLE,** in Rural Economy, a term which is provincially applied to signify a withe or twisted wooden rope which is employed in fastening a gate, from whence to "cringle up" implies to fasten with a wooden rope or withe.

**CRINGLES,** in Soil-making, small holes formed on the bolt-ropes of sails by intertangling the strand of a rope alternately round itself and through the strands of the bolt-rope, till it assumes the shape of a ring. To the cringles the end of a rope is fastened, to haul the sail up to the yard, &c. They should be made of the strands of new bolt-ropes, half an inch smaller than the bolt-rope on the fall.

**CRINIERE, Fr.** The mane of a horse, literally fringentur. This name is also given to a tuft of horse hair fixed in the crest of a dragon's helmet, and flowing or waving down to the lower part of the same, on the side thereof, like a garland.

**CRINITA, in Botany, capsaei; Holtt. See Pavetta capsaei.**

**CRINITUS applies to any plant, or part of a plant, that remembles a tuft or head of hair, as the inflorescence of Helianthus eritrosum of Linnaeus, and Phleum eritrosum of Schirher. It differs from comata in being more precisely and accurately composed of hair or bristles, and not refracted to a flowing or pendulous form or posture. In some cases it is equivalent to capitellus. The roots of Bleum achimanticum, and Triglochin bulbifera are rather capitulate, red eritrosum, being each crowned with a dense tuft of upright hairs or bristles, originating from the fibres of decayed leaves or leaf-stalks, and serving to protect the root, or young plant, from cold, or other injuries, in a remarkable manner. S.**

**CRINITUS, in Botany, a name given to a plant of the circle of Lower Saxony, and territory of Erzgeberg; 6 miles S. of Zwickau. See Digenia.**

**CRINODENDRUIM, in Botany, (from crinus, a horse, and dendron, a tree) Scabre, Gen. 1.111. 1567. (Patagonia, Enc.) Class and order, monadophila decandria. Nat. Ord. Unidentified, Juff. 431.**

**Gen. Ch. Cal. none. Cor. bell-shaped; petals six, oblong, erect, spreading at the top. Stem. Filaments ten, united at the base into a tube; anthers egg-shaped, erect. Fil. Germ superior, egg-shaped; style single, awl-shaped, a little longer than the filaments. Peric. Capsule conico, obtusely three-cornered, one-celled, opening elastically at the top with three valves. Seeds three, roundish, nearly the size of a pea.**

**Eff. Ch. Calyx none. Corolla bell-shaped. Petals six. Capsule with three seeds, one-celled, trigonous, opening elastically at the top. See Digenia.**

**Ep. Ch. Patagonia. Mart. Poir. Wild. Molin. Chil. 1797. Cavan. Dif. 5, 300, tab. 153, fig. 1. A superb evergreen tree, with a trunk often seven feet in diameter. Leaves bright green, opposite, lanceolate, acute, serrated, without stipules; petals short. Flowers solitary, axillary, pedunculate, terminal, like a lily. A native of Chili. Julien sufficed that the capsules sent to Europe by Dombey, under the name of Patagonia, might belong to a plant of this genus; but Ruiz and Pavon assert that Dombey's plant, which produces the true Patagonia of Chili, constitutes a distinct genus, which they call Triglochin. The trivial name given to the present plant is therefore erroneous and tends to nullify. See Triglochin.**

**CRINONES, from crinus, hair, in Medicine, a sort of worms, sometimes found under the skin, in children; resembling short thick hairs, or bristles. They are called ducwew, and from the Latin Thekciere, to eat, from their preying upon the substance of the**
the child, or confusing its nourishment. See Dacry-

The common way of getting out these worms is by the
point of a needle; and to prevent their forming there again,
the usual custom is to wash the parts with wine or vinegar,
with alum, nitre, or common salt, or with a strong bichromic
of oak niles, and afterwards anointing them with an oint-
ment of the common kind, used for scabrous eruptions,
with a small mixture of quicksilver.

CRINONIA, a kind of cap, worn by the emperors of
Constantiople on solemn occasions.

CRINUM, in Botany, (sp. Thes.). No name given by
the Greeks to the fly, and some other plants with flasky

Gen. Ch. Cal. Involution spathe-shaped, of two or more
shaped leaves, umbelliferous, reflexed after it has opened.
(Cr. monopetalous, funnel-shaped; tube oblong, cylin-
deral; border half fix-cleft; segments lanceolate-linear, ob-
tute, channelled, reflexed; three alternate ones, in most
species, distinguished by a hooked appendage. Stem fila-
ments fix. awl-shaped, the length of the border and in-
ferred in its base, converging; rolled, oblong, linear, rising
upwards, incumbent. Fl. Germ inferior; style filiform,
the length of the flower; stigma simple, or three-leaflet.
P. Capsule somewhat egg-shaped, three-celled. Seeds
numerous.

Eff. Ch. Corolla funnel-shaped, half fix-cleft; tube fibri-
lar, border spreading, recurved; segments lanceolate-
linear, channelled. Filaments inserted in the base of the
border, distinct. Germ inferior.

Obl. It differs from penanther in the want of a nectary.
The crinum of Gartner and La Mareck has a superior germ,
and is formed for the crinum Africanum of the Species Plant-
tatum, which has that character, and on that account has
been made by Schrader a distinct genus under the name of
Agapanthus. La Mareck, however, has included in his cri-
um, C. americanum and C. tenue, because he thinks
their germ is not decidually inferior. Such as are fo he has
removed to amaryllis.

Linn. "Leaves linear, acuminate, keeled; flowers
filiform; tube longer than the border; spathe two-leaved.
Willd. Root folid, top-shaped, surrounded with long
branching fibres. Stem short, thick, coated, white, thin-
line. Lower three feet long, three inches broad, fuscate-
linear, erect, frillated, thick, imbricated. Scapes axillary,
cylindrical, the length of the leaves. Flowers white,
larger, in a single flat umbel; common involucr oblong
segments of the corolla equal, not hooked; filaments dilate.
Calyx tube roundish, irregularly lobed. Lour. There has been
some confusion with respect to this species. Obeche, a pupil
of Linnaeus, observed it in 1751, embellishing the sandy
shores of the island of Java; and in the year following,
brought into Europe, not only bulbis preferred in hand, but
also the plant itself in a flower-pot, which arrived perfectly
alive in Sweden. About the same time Mr. Miller received
from Panama and Carthagena two distinct plants, the
former of which he supposed not to differ from the Afric.
species, and accordingly figured it under that name in his
coloured plates. Linnaeus, misled by Miller, quoted that
figure as really belonging to his C. afacium. In this error
he was probably confirmed by observing in Miller's figure
no appearance of a hooked appendicle at the summit of the

alternate segments of the corolla; and hence seems to have
considered that appendicle itself as a sufficient specific disti-
tinction of the larger American plant. We apprehend,
however, that it was left out in Miller's plate by the negli-
gence of the engraver; for we have now before us a dried
specimen of a plant cultivated many years since by Mr.
Saltibury at Chapel Allerton, under the name of crinum
asiaticum, in which that particular character is distinctly
visible. The real C. afacium does not appear ever to have
been seen by Miller; nor was it known at Kew when the
Horst Kewenensis was published; but the author of the spe-
cific characters in that work had discovered Miller's mistake,
and removed the reference to the new species erubescens.
C. americanum of Linnaeus. Gartner quotes the
C. afacium of Linnaeus, as his bulbile afacium; Mr. Sal-
tibury, however, affirms us that the bulbile is certainly a
plant not in our collections, and that he is yet ignorant
what it is, but that if he should judge as in one particular,
it would be the caesp. alyrites of Ruphison, quoted
by L'Heritier, as a synonym of his crinum nervosum.
Mart. 2. Willd. 2. Hort. Kew. 413. (Lilico-aphelodaceus
Americanus maximus; Comm. Ar. 13. Eith. 194. tab. 154. fig. 155." "Leaves oblong-lance-
olate, entire smooth at the edge, contracted and hooked at
the end; flowers pedicelled; tube shorter than the border.
Scape a foot and half high, the thickness of a finger, slight-
ly compressed, coming out from the root on one side of
the leaves. Leaves two feet long or more, three inches broad,
furrowed on the upper surface, keeled on the lower, smooth,
fluff, light green, slightly undulated at the edge, thickish,
shar-tpointed, punctured with numerous and rather large
pores. Flowers milk white, opening successively, and each
lasting only one or two days; tube about two inches long;
segments of the border keeled; filaments long, bending in,
white at the bottom, purple at the top; style shorter than
the filaments, of a deeper purple colour. Some very flender
threads adhere to the involucr, and to the pedicels of
the flowers. A native of South America; cultivated at Eltham
by Dr. Sherard in 1732. 3. C. erubescens. Hort. Kew.
413. Mart. 3. Willd. 5. (C. americanum; Linn. Sp.
Pl. C. afacium; Mill. tab. 50. Lilico-aphelodaceus
Americanus; Comm. Rar. tab. 155.) "Leaves oblongate, cartilagi-
 nous-crenulate, drawn out and unfolded at the base; flow-
er fusifide; tube longer than the border." Scape rising
from the root at the outside of the leaves. Flowers eight
or ten, forming an umbel, closely joined at their base, but
spreading above; petals delicate, not continuing in beauty
more than four or five days. A native of the Spanish West
Indies. 4. C. bracteatum. Willd. 4. "Leaves oblong-
lanceolate, attenuated at the base, cartilaginous and smooth
at the edges, somewhat callous at the tip; flowers pedi-
celled; tube shorter than the border; spathe numerous,
longer than the tube." Flowers white; segments of the
border narrow, reflexed, channelled, hooked at the tip;
bracts or spathe oblong-lanceolate. Described by Wil-
denow from a living plant; native country unknown.
(Caesp. alyrites; Ruph. Amb. 6. p. 160. tab. 70. fig. 1.) "Leaves roundish, nephed; filaments dilated at the
base." Leaves cordate-rounded, entire, acuminate,
with concentric nerves. Scape many-flowered, with a
many-leafed involucr. Flowers on rather long peduncles;
tube of the corolla pirliform; segments of the border lanceo-
late, acute, spreading; filaments shorter than the segments
of the corolla, straight, not declining. A native of the
Philippine islands, observed by Mont. Poiyere.
CRI

Crisium ariifianum; Linn. See Agapanthus umbel.
laris.
Crisium angulifolium; Linn. jun. See Cytantherus
angulifolius.
Crisium capris; Pall. See Amaryllis capris.
Crisium falcatum; Jacq. See Amaryllis falcata.
Crisium laevis; Linn. See Amaryllis laevifolius.
Crisium lanceae; Linn. jun. See Amaryllis lancea.
Crisium longifolium; Thunb. See Amaryllis longi-
folia.
Crisium obliquum; Linn. jun. See Cytantherus ob-
ligius.
Crisium speciosum; Linn. jun. See Amaryllis purpa-
reca.
Crisium tenellum; Linn. jun. See Strumaria filifolia.
Crisium zeylanicum; Mur. See Amaryllis zeylan.
cus, under which genus it was originally placed by Linnaeus.
Mr. Gawler Kerr declares (Bot. Mag. 923. *) that after a
diligent research, he is assured of the specific identity of the
Indian amaryllis zeylanica, and the African ornatia, and has
published the crinium giganteum of the Botanical Repe-
tory, tab. 159, as an obvious variety. Mr. Salbury thinks
that the Am. ornatia and C. giganteum differ, and is in-
clined to refer both to the genus crinium. His C. yemen-
florum, figured in Paradisus Londinensis, pl. 52 is, as he
himself acknowledges, so similar to A. ornatia, cultivated in
the flowers about London, that he cannot find a satisfactory
specific distinction. It differs so much, however, in the
structure of its anthers, that he thinks it safe for the pres-
ent to separate it. He says that these plants and the C.
longifolius of Thunbery, since removed to amaryllis,
may be distinguished from that genus by the herb alone,
as well as by the fruit. See Par. Lond. 52.
Crisium, in Gardening, comprehends plants of the flow-
erious and bulbous-rooted perennial kinds; of which the
roots most cultivated are, the keel-leaved Aitific cri-
num, (C. affortantum) the great American crinium, (C. a-
meritianum) and the small American crinium, or aphodel
lily, (C. crufifera).
Method of Cultucre.—All these three sorts are capable of
being increased, by planting the off-lets of their roots in
pots filled with good fresh earth, plunging them in the
bare-d of the flower, where they should be continued until
they begin to show flowers. After this they may be re-
moved, when necessary, to the shelves or other parts of the
hot-house where they must be kept.
It is necessary that the roots of all the different sorts
should be shifted every two years, at the period when the
leaves decay, in order to separate the off-lets for the purpose
of increase, and to refresh the plants with fresh mould.
The succulent tallbs and beautiful flowers of these plants
afford a good effect among other flower plants, when properly
placed in mixture with them.
Crio, Cape, in Geography. a Cape on the W. coast of
Aftric Turkey. N. lat. 35° 45'. E. long. 27° 8'.—Also,
a cape of the island of Cunda; 7 miles S.W. of Canes.
CRIQUES, Fr. in Fortification, small ditches, which are
made in different parts of the ground for the purpose of
inundating the country in the vicinity of a place, to render
the enemy’s approach to it either difficult or impracticable.
CRIQUETOT LENSVAI, in Geography, a small town
of France, in the department of the Lower Seine, 9 miles
south of Fieamp. It is the chief place of a canton in the
district of Havre, and contains 1650 inhabitants. The can-
ton has 26 communes, upon a territorial extent of 140 kilo-
metres, with a population of 14,748 individuals.
CRISOULIO, Gio Filippo, and Gio Angiolo, in
Vol. X.

CRI

Biography, two brothers, natives of Gaeta, who enjoyed
considerable reputation at Naples in the 16th century, as
historical painters. Gio Angiolo was the founder of Marco
di Siena. Gio Filippo was a disciple of Andrea da Salerno,
and afterwards travelled to Rome, where he studied the
compositions of Raphael with great profit. The works of
these two artists are described by Dominici in his lives of
the Neapolitan painters. Gio Angiolo died in 1571; Gio
Filippo survived him 12 years, and died at the age of 75.
Lenzi. Storia Pitt.

CRISIS of crises, a sudden change for the better, in
the symptoms of acute diseases, preceded by a considerable
disturbance of the functions, and accompanied by some eva-
cuation.

This appears to be the sense in which the term was
generally understood by Hippocrates and Galen, and the other
ancient physicians, who adopted the doctrine of crises. It is,
however, not only a sudden alteration towards recovery,
which they have denominated a crisis; but a rapid change
for the worse, or to death itself, also received the same
nomination; but the epithet bad was in that case added.
And those disturbances, which only make some considerable
changes, without entirely removing the disease, or which are
followed by an exacerbation or return of the symptoms,
were called imperfect crises. The word crisis, says, literally
signifies, judgment, from σκισ, I judge and Galen is of opin-
ion that the term was originally the contrivance of vulgar
and uninformed persons, rather than, of physicians.
The change being always preceded by great disturbance of
the body, and alarming symptoms, the friends and attendants,
alarmed by the violence of the disease, pronounced that a
deuctive judgment, as to the death or recovery of the patient,
might speedily be formed; hence they called the change of
the symptoms themselves, the crisis, or judgment.
The disturbances, the violent symptoms, the discharges, which
enure, were hence also denominated critical discharges, criti-
cal perturbations, and critical symptoms.

It is a curious fact in pathology, that the vital powers,
after being worn down, and apparently almost exhausted,
by the continued violence, or successful exacerbations of
fever, often suddenly and spontaneously become recruited,
the alarming symptoms disappearing, and leaving the
patient with little more complaint than extreme general
weakness. This sort of change takes place most commonly
in continued fevers, more especially in those which are violent
from the beginning. For these crises happen most frequently
within the first ten or eleven days of the disafe, and if they
occur at a later period than the fourteenth, are lefts de-
sively beneficial, and lefs distinctly marked. Crises, indeed,
do not happen so frequently in this climate, or in modern
times, as anciently; in so much that it has been disputed
whether the maxims, which have been handed down to us,
have any application to the disafe which we now observe.
It is probable, that the frequent vicissitudes of our climate,
the greater activity of our practice, and the lefs regular
mode of life among the moderns, is the cause of the com-
parative rarity of the occurrence of violent crises: they oc-
cur, yet do not, sufficiently often, to render the study of
them important, especially with a view to the prognosis of
the event.

The doctrine of crises, although originating, no doubt,
in the careful observation of facts, for which the physicians
of the Hippocratic school were remarkably distinguisht,
was nevertheless much connected with their speculative opin-
ions respecting the humoral pathology; and especially with
the doctrine of concoction. (See CONCOCTION.) They
observed that those sudden or critical changes were always
preceded

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preceded or accompanied by some evacuation; as by copious sweat, or a great deposition of sediment in the urine, or by a discharge from the bowels, by hemorrhages, &c.; in pulmonary fevers, by a free and copious expectoration; and so on. Hence they were led to supposes, that the disease was the effect of the presence of some morbid matter in the humours, and was itself an effort of the constitution to expel this matter, after due concoction, from the body. These discharges were, therefore, considered as proofs at once of the existence of morbid humours, and of the successful struggles of the system in expelling them; and the violent perturbations which preceded the expulsion, were deemed to be signs of the conflict between the powers of the constitution, struggling to expel the humours, and the natural influence of these humours upon the constitution. The hypothesis was plausible, and has been the groundwork of the reasoning of medical writers, from the time of Hippocrates, down to the age of Hoffmann and Cullen; and it is still the favourite theme with the ill-informed part of the profession, and with the public at large. But the distinguished professors, just mentioned, taught us to attend to the operations and excitability of the nervous or living power in the fluids, by the action of which the fluids are principally modified in their qualities. Thus in respect to the progress of common inflammation, which is the prototype of the humoral theory, the swelling, tension, pain, &c., were considered by those pathologists as the effect of obstruction, occasioned by the presence of morbid humours: and when the inflammation was not gradually cured by resolution, but went on, it was only finally removed by a discharge of the morbid humours, when concocted in the shape of pus. Now the modern doctrine, which is deduced from a more complete generalization of the facts, teaches us that these phenomena are not the result of morbid humours circulating in the vessels; but that the morbid humours are the result of certain disordered actions of the vessels, by which the secretions of those vessels are altered. In the healthy condition of the body, there is no urine, no bile, no saliva, in the blood; these fluids are produced in the kidneys, the liver, and the salivary glands, by the peculiar action of the vessels of those organs, which gives new combinations to the elementary parts of the blood. This action is called secretion. Similar actions in inflamed parts produce the variety of humours which appear in the progress of the inflammation; as particularly obvious in the inflammation of surfaces. Take Carza for example. The natural secretion of the membranes lining the nose is a simple moisture. But if an inflammatory action is excited in these membranes, the vessels, at the commencement, either do not secrete at all, or they pour out a thin and acid humour, which the ancients call crudus; as the inflammation goes on, the action of the vessels changes, and they produce a thick, whitish mucus; and when the inflammatory action is beginning to subside, the secretion from the blood is again altered, it has the appearance of yus, and is said by the humoralists to be concocted. The inflammation from this time declines and ceases. In this case there is no morbid humour in the blood of the inflamed membrane; but the action of the vessels being changed, in various progressive degrees, by an external caule, viz. cold, they produce new combinations in the blood, which circulate through them, and at once generate and eject the morbid humour. The morbid humour is not a caule, therefore, but an effect, and a sign of a morbid condition of the living power, and the consequent morbid action of the parts. And thus it is, also, with respect to those discharges which are deemed critical in the more general deranged action of fevers. It will not be difficult to shew, as we enumerate them, that they are often the effect of a favourable change in the system, than the causes of it. A profuse sweat is a symptom which very commonly attends those sudden changes from fever to health. To accompanies the crisis in intermittent fevers, and frequently in the fevers, or inflammatory fevers: indeed, continued fever in general is seldom terminated favourably, without some degree of moisture appearing on the skin. But physicians were long misled into a most pernicious practice, (the employment of the hot regimen, and alexipharmics,) by the conclusion, that the solution of the fever was probably to be attributed to the flow of sweat, and that could this discharge be by any means be produced, it would always prove equally beneficial. But a proof of their error, and also of the position that such fatal sweats were the result of a favourable change in the constitution, is this, that sweats, forced by artificial means, never affect the solution of the fever, but most frequently increase its violence, prolonging its duration, and, by greatly debilitating the patient, endanger his life. Nor is every spontaneous sweat salutary: unless it be universal and thin, it is seldom beneficial. The same observation may be made as to the deposition of the sediment in the urine, which commonly appears at the crisis, and was deemed a proof of the concoction being completed. Now this deposited matter is not in the blood, but secreted by the kidneys, and it exists in some proportion almost constantly in the urine of persons in health. Its production in larger quantity is much connected with a soft and moist state of the skin, and invariably accompanies much sweating, from whatever cause produced. It occurs with the spontaneous sweats of fever, whether critical or even prejudicial; it is found after all night sweats, as from those of hectic fever, where no relief is brought by it, and even when there is no fever at all; and, farther, it may be produced in any one at pleasure in a state of health, by promoting the perspiration by small doses of tartar emetic or Dover's powder. (See Wilfon on Febrile Diseases, vol. i. p. 598.) Therefore all that can be inferred from the appearance of the latent sediment in the urine in fevers is, that the relaxation of the skin has taken place, and its secretion is restored; or in other words, where the deposition is spontaneous, that it is the consequence of a favourable change in the constitution. The changes in the urine, however, although affording no particular indication of cure, merit our attention, as they sometimes anticipate the other phenomena which mark a solution of the fevers.

Among the critical discharges, diarrhoea occurs less frequently than the two preceding ones; Hoffmann, however, remarks, that in the putridal fever he has more frequently observed a diarrhoea critical, than either sweat or hemorrage. This crisis is generally of some time preceded by flatulence, gripes, and pains of the loins; it has been said to be prefaged by an intermitting pulse; (Nihell on the Pulse;) but the pulse has often been observed to intermit, when diarrhoea succeeded. We believe, however, that diarrhoea, in the fevers of this country, is more frequently detrimental than critical; and where it is attended with much loss of strength, it is among the worst and most unmanageable symptoms of the disease. It is frequently, we believe, the consequence of a neglect to clear the bowels in the commencement of the disease.

The crisis, which is next in degree of importance and frequency, is hemorrhage or discharge of blood. It is curious to observe, that hemorrhages, even to a considerable extent, are sometimes followed by immediate relief to the symptoms; even in typhous fevers, i.e. in those fevers which are characterized by great debility. The most frequent critical humor-
hemorrhages are those from the nose, and the quantity is generally small. These have been said, by the same whilistical author above quoted, to be preceded by a rebounding pulse, whose stroke seems double: (Nihil.) There is generally some heat, pain, or tension in the part whence the blood is about to flow. It may here be observed, that the relief which a trilling hemorrhage from the nose sometimes affords to the patient, cannot be explained upon the notion of any morbid matter being evacuated with it. If there be a morbid humour in the circulating mass, it is quite absurd to suppose that a very trilling and partial abstraction of the blood can free the system of much of that humour, or that it can leave the remaining blood in the circulation less impregnated than before.

Other discharges have been mentioned as occasionally critical, such as vomiting, flow of faeces, cutaneous eruptions, &c. &c. but these are comparatively rare.

Although the discharges which we are accustomed to see in this climate, and in persons using a mode of life altogether different from that of the ancients, are by no means the same as those recorded by the physicians of Greece and Rome, and differ especially in the rarity of well-marked crises; yet the observation of those imperfect crises, those perceptible changes for the better or worse, which are frequently accompanied by some evacuation, occurring in modern diseases, is important. In the first place it will aid us in forming a correct prognosis of the termination of discharges; and secondly, which is of greater consequence, it will afford us in the choice of proper measures in their cure. It will enable us, for instance, to judge of the propriety of suppurating, or of allowing to proceed those evacuations which obviously tend to augment or to alleviate the original disorder; and will point out to us when we may aid and mitigate the proclivities of nature in the constitution. The speedy relief, or the continuance and even increase of the symptoms of the disease, is the best criterion of the beneficial or injurious nature of such evacuations. The ancients, however, had two sorts of tests by which their prognostics and practice were guided. The first and most important point was, according to Galen, the observation of the concussions of the urine, excrement, and the fucra. I have been present, he says, a thousand times during the occurrence of crises, and I never saw one person die, whose crisis was preceded by concussed discharges. (De Crifibus, lib. iii.) The second point in importance, according to the same writer, was the observation of the day on which the crisis took place. For it had been remarked from the time of Hippocrates, that these sudden crises occurred more frequently on certain days, reckoned from the commencement of the discharge, than on others; and these were hence termed critical days. See Critical Days. The crisis was considered as most likely to prove curative if it had been indicated, i.e., if an amendment had taken place on the previous critical day; and especially if it occurred on a critical day of great power. The observation of the species and type of the discharge also aided the ancient prognosis; as, whether it was quiet or, tertian, ardent fever, pleurisy, &c.; or whether moderate, mild, malignant, and so forth. And farther, they did not omit to note, whether the first of discharge was correspondent with the nature of the disorder. Some of their observations on this head are fanciful, and purely hypothetical. Thus Galen affirms, that when the convex part of the liver is dis- eased, a crisis takes place in three ways; namely, by hemmorhage from the right nostril, by free sweats, and copious discharge of urine. When the concave parts of the liver are affected, the crisis is completed by means of bilious fluids, and sweat, and sometimes by vomiting. It is une-

ecessary to detail the various observations of this sort which have been transmitted to us by the ancient physicians. The reader who is curious on the subject, will find an ample collection of them in Galen's three books, D. Crifibus, particularly in the third; and also in his book, De Dichis Decreto

rione. See also Von Swieten's Commentaries. Aph. 587.

CRISNA, or KRISHNA, in Geography, a river of India; called also KISTIANi; which fee.

CRISNEZ, or Cape, a cape on the coast of France, in the English channel, between Boulogne and Calais. N. lat. 50° 30'. E. long. 2° 35'.

CRISP, Tobias, in Biography, a divine of the church of England, was born at London in the year 1600. He was educated at Eton, and from thence he removed to Cambridge, and afterwards to Balliol college, Oxford. In the year 1627 he was appointed rector of Brinkworth in Wiltshire, and shortly after he took his degree of doctor in divinity. In early life he was the favourer of the doctrines of Arminianism, but he advanced in life he flood forth as the champion of Antinomianism. During his life-time he published nothing in justification of his tenets; but after death sermons in three volumes 8vo. were printed, which were afterwards published in one volume 4to. He died in 1642; and though the tenets which he embraced seem to be a plea for licentiousness, yet Dr. Criso was himself remarkable for the chaste life of his piety, the purity and failing of his manners, and the meekness and modesty of his deportment. His income being ample, he devoted a considerable part of it to works of hospitality and kindness.

CRISPET, in Geography, a mountain of Switzerland, in the canton of Uri, 13 miles S. of Altroff.

CRISPILLO, a town of Naples, in the province of Abbruzzo Citera; 25 miles E. of Civita Dorella.

CRISPET, CRISPILLO, in Biography, a painter of the 18th century, a native of Tortona, in the state of Piedmont. In the church of that place is a picture of the Madonnas with St. Francis and St. Dominic, bearing his name, and the date 1593, and in Vigevano, the meeting of Mary and Elizabeth, in the church of St. Lorenzo, both evincing him an artist of no small abilities. (Lazz.)

CRISPITANA, in Ancient Geography, a place of Pannonia, near the route from Turin to Carnuntum, between Uimi and Musa, according to the Itinerary of Antonine.

CRISPUS POLIES, in Botany, a curled leaf, has its border considerably more dilated than the disk, in consequence of which the former part becomes elegantly curled and twisted. Linnaeus thought this a morbid luxuriance, and with great probability. It is the characteristic mark of Malva crispa, the curled mallow, a plant cultivated chiefly for ornamenting the table in darts, and which seems most likely to be a variety of Malva verticillata; yet it retains its peculiar character when propagated by seed, at least in the rich foil of a garden. The above term is also applicable to the margin of the cup or nectary in several species of Narcissus, even in their natural state. With respect to leaves, the reverse of this character is folium concavum, a concave leaf, whose margin is more tinge than the disk, like Cyma Nutans. Sm. Exot. Bot. t. 32. S.

CRISPUS, Anthony, in Biography, born June 2nd, 1502, at Terapan, a town in Sicily, received the early part of his medical education under his father, whom he succeeded in his practice, in which he became so famed, that persons referred to him for his advice, not only from the most distant parts of the island, but from many parts of Italy also. Towards the latter end of his life, which was extended to the year 1588, he united the office of prelate to that of physician, and a few years before his death, he retired altogether from
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from business. The following are the titles to a few of his numerous publications: "In lethargum fabri superruentem acetis, Commentarii duo," Panon. 1668, 240. "De la poa frangia por patrium corporis infirmis, superruentem cum Tuli, &c." 1632, 4to. The practice here recommended has been very little altered since his time: also a treatise on the cure of infectious fever by venesection and catharties, the mode now recommended in the yellow fever, and on the most celebrated mineral waters of the island, with an examination of their constituent parts. Haller Bib. Med. Elay. Diet. Hift.

CRISSA, in Ancient Geography, a town of the Locrian Ozol, near the gulf Crizeus, formed by a part of the gulf of Corinth, and now called "Collo di Salona." CRITES, or KRESSE, in Military Language, a kind of dagger used by the Malays, particularly in the island of Ceylon; the blade of which is of the best tempered steel, and often in a serpentine form, so as to inflict a most dreadful wound; the handle is of ivory or wood, carved into the figure of a man's body and arms, with a head representing something between that of a man and a bird: this they call their "falam," or god; and to this figure they make their "alai," or obeisance, before they draw the kreefe to execute any bloody purpose on which they have determined. After they have ratified their vow by this ceremony, they draw them kreefe, and never again sheath it till they have drenched it in blood. So rude is their ferocious disposition, that if their adversary is placed beyond the reach of their vengeance, sooner than not indulge it they will plunge the dagger into the body of a pig, dog, chicken, or any other living animal which happens to come in their way. The seaford is made of wood, frequently ornamented with gold wire; and the whole appearance of the weapon, as well as the mode of wearing it, on the right side, greatly resembles that found in the ancient defra of the Celtic nations. This terrible instrument is rendered still more so by its being always poisons, commonly by the juices of some poisonous herbs, and among those who can procure it, with poison from the Upa tree. These daggers, in the use of which the Malays are peculiarly dextrous, are regarded by them with veneration, and they defend as sacred reliques from father to son, and from generation to generation. No money is accounted sufficient to purchase them, and no violence can compel their owners to give them up. When a Malay is pressed in battle, he will sooner be slain, or kill himself, than surrender his kreefe to the enemy.

CRISTA, a Grift, in Botany, applies to several accedentary parts, or appendages, chiefly belonging to the stamens of plants, thence said to be eriglata, as in the genus Erica and that of Pains, in both which inflates the crest of the antler is of great use in furnishing specific characters. The same term is used for an elegant double tuft or fringe, attached to the keel of the flower in many species of Polygala, niiilkwort, whence such species are denominated eriglata, and they form a section in the genus by themselves. The pod of Hedysarum Caput galli, and H. GrifJa-galli, has a curious creaf, running along its upper edge, which has given occasion to the names of these two species. In the former of them its segments are awl-shaped and simple; in the latter flat, dilated, and toothed: which marks afford a good specific difference. See Hedysarum. S.

CRISTA-Gallis, in Anatomy, a process flanding out from the middle of the upper surface of the cribiform lamella of the ethmoid bone. See Skeleton.


CRISTA Galli, in Conchology, the name of a peculiar species of muscle, called also by some auris porci, or the boar's ear shell. See Mytilus.

CRISTA is also a term used in Surgery, for certain preternatural excrescences arising about the fundament, resembling cock's combs.

The M. Dionis fans, are taken off either by ligature, cauterization, or amputation. When they have other figures they have other names, as fus, &c. See Condyloma.

CRISTA is also used for a crooked, twisted, spiral eminence, in the middle of the spine of the omeplas.

CRISTA-porin, in Botany, a name by which some authors have called the poinciana.

CRISTA-porina is also a name given to the tree, the wood of which is usually denominated logwood.

CRISTARIA, seeceas; Som. See Coniferae de-cadaverum.

CRISTIANA, or CRISTA, in Geography, a small island of the Grecian Archipelago, in the Crete Sea; the ancient Leton. N. lat. 36° 20'. E. long. 25° 16'.

CRISTOFORI, or CRISTOFANI, Fabio, in Biography, an artist of the 17th century, who carried the art of painting in Mofa to the greatest perfection. The St. Petronilla, from the large picture by Guercino, St. Girolamo, from Domenichino, and the baptism of Christ from Carlo Maratta, in the church of St. Peter at Rome, are sufficient proofs of his extraordinary abilities. He had a son, named Petro Paolo, who assisted him in the work. The latter died after 1730.

Lanzi.

CRISTOFORO, a painter of the 15th century, who is laid by some to have been a native of Ferrara, by others of Modena. These cities dispute the honour of having given birth to this early artist. The abbe Lanzi does not pretend to decide the question, but he informs us that he painted many works both in fresco and stilemper in Bologna, in a style evidently not derived from the school of Florence. Some of Cristoforo's pictures bear the date 1352. Lanzi.

CRISTONAE, in Ancient Geography, a people placed in the vicinity of Scythia by Stobaeus, who says that the women burnt themselves on the bodies of their deceased husbands.

CIRTALE, or CIRTAI, a town of Asia, in Cappadocia. Herodotus.

CRITIUM, or CRITIUM, formed of xiphe, I determine, a rule or standard whereby to compare propositions and opinions, in order to discover their truth or falsehood.

This doctrine of criteria, and the characters and rules thereof, make the first part of the Epicurean philosophy.

Evidence is the grand criterion of truth.

CRITH, or CORATH, in Ancient Geography, a torrent of Palestine, which commenced in Acrabatina, near Silo, ran by the north-westwards, passed S.E. of Paphia, and emptied itself into Jordan.

CRITHE, the Sing. in Surgery, a small tubercle, hard, red, and immovable, seated upon the eye-lid, the eilia, or range of hairs. It is always included in a kind of cysta, and by inflammation degenerates into a thickish matter, from whence frequently proceed intense pains, and various disorders of the light. It is sometimes seated immediately under the skin of the eye-lid: sometimes it is within, under the muscle. When this tubercle is movable, it is generally called chalazion, or in English eye, or fistula.

lanceolate, obtuse, reflexed; partial lanceolate-linear. Perianth proper, scarcely discernible. Cor. Universal and partial umbels uniform; florets all fertile; petals five, egg-shaped, inflexed, equal. Stam. Filaments five, longer than the corolla; anthers roundish. Pfl. Germ inferior; styles two, reflexed; stigma obtuse. Peric. none; fruit oval, compressed, thistled, dividing into two elliptical flatish seeds.

Eff. Ch. Fruit oval, compressed, thistled. Flowers equal; calyx entire.


Crittbum maritimum f. spinosum; Bauh. Pm. See Echi-nophora f. spinosa.

Crittbum pyrenaicum; Linn. See Athamantis libanatis.

Crittbum, in Gardening, comprises a plant of the herbaceous succulent, perennial, succulent kind; the sea or rock fampire (C. maritimum.)

Method of Culture.—This is a plant which, from its being a native of the sea-coasts, is ruled in the garden with some difficulty. In order to its successful culture, it should have a rather moist, sandy, or gravelly situation, and be duly supplied with moisture. It may be propagated either by laying the seeds in the places where the plants are to remain, in the early spring months, to the depth of about half an inch, or by parting the roots, and planting them out where they are to remain, in the beginning of autumn.

When the plants have been introduced in either of these methods, they will continue for a number of years.

The leaves constitute an admirable pickle, and are sometimes used in pickles, as well as for other culinary purpases.

CRITHOMANCY, a kind of divination, performed by considering the dough, or matter of the cakes offered in sacrifice; and the meal burned over the victims to be killed. Hence, as they ordinarily used barley-meal in these ceremonies, this kind of divination was called crithomancy, from xipho, barley, and mauro, divination.
we can have little doubt that the observations of Hippocrates are founded in truth.

The doctrine of critical days, however, as delivered by Hippocrates, and his great commentator, Galen, is involved in some confusion, and not a little misconception. This has been attributed to the circumstances, that the works, to which the name of Hippocrates is attached, were not all written by one person; and also to the errors of transcribers. From whatever cause, the doctrine is obscured by such inconveniences, and has been made open to dispute from early times.

The substance of the doctrine is found in the books on Prognostics, and in the Aphorisms of Hippocrates; and the facts, on which it is founded, are related in the treatise on Epidemics. Galen believes that the latter was first written, and the former deduced, by induction, from the facts which it contains. In one of his aphorisms Hippocrates states, that "fevers in febrile patients are fatal, if they begin on the third, fifth, seventh, ninth, eleventh, fourteenth, seventeenth, twenty-first, twenty-seventh, thirty-first, or thirty-fourth day; for these fevers terminate the disease. But the fevers which happen not on these days, denote that the disease will be long, difficult of cure, and liable to relapse." (Aph. 36. sect. 4.) It will be observed, that the twentieth day is here enumerated among the critical days. This is considered by Van Swieten and Cullen as an error of transcription, or an interpolation. But the twenty-first day is mentioned in other places in the works of Hippocrates; and Galen admits it to be critical, although less frequently than the twentieth day. Archigenes, he observes, considered the twenty-first day as more frequently critical than the twentieth; and Dioecles deemed it next after the twentieth in critical power. (Galen de Dieb. Decretoris, lib. i. cap. 10. and lib. iii. cap. 9.) Dr. Cullen's reason for denying the critical quality of the twenty-first day is somewhat hypothetical. From the universal tendency to tertian and quartan periods in intermittent fevers, he presumes such a tendency to exist in the animal economy in all fevers; and hence he believes the critical days to occur at tertian periods to the eleventh day, and afterwards at quartan periods to the twentieth, or perhaps longer. The critical days, according to his notion, are therefore the third, fifth, seventh, ninth, eleventh, fourteenth, seventeenth, and twentieth. (First lines, par. exi. et fig.) After this he marks no critical day; because, though fevers are sometimes protracted beyond this period, it is more rarely, so that there are not a sufficient number of observations to ascertain the course of them; and because it is probable that, in fevers long protracted, the movements become less exact and regular, and therefore less safely observed. He believes also that this is the series of critical days, from comparing the facts, which are related in the writings of Hippocrates. From these facts, as collected by M. de Haen, it appears, that of 163 instances of the termination of fevers, which happened on one or other of the first twenty days of the disease, there are 167, or more than two-thirds of the whole number, which happened on one or other of this series of days; that none happened on the second or thirteenth day; and upon the eighth, tenth, twelfth, fifteenth, sixteenth, eighteenth, and nineteenth, there were but 18 instances of termination, or one-twelfth of the whole. And, he adds, the many terminations which happened on the seventh, fourteenth, and twentieth days, afford a proof both of critical days in general, and that these are the chief of them.

But the majority of the observations of Hippocrates and Galen applies to a different series of days from those above stated, in which some days are included as frequently critical, which are altogether omitted in the preceding list. Whether altogether from the induction of experience, or whether under the influence of some Pythagorean hypothesis, as to the power of number, Hippocrates considered the septenary period as the most important, and the quartenary, or division of the former, the second in critical power. Thus the fourth, seventh, fourteenth, seventeenth, and twentieth, are deemed the most frequently critical; but not in the order here stated. The twentieth, the fourteenth, and the twentieth, were the most powerfully critical; the fourth, seventh, and seventeenth, less critical, but connected with the former as indices; so that any change taking place on the fourteenth of each week, indicated a similar and more complete change on the seventh. The third, fifth, sixth, and ninth, which are occasionally critical, but of feeble power, i.e. seldom finally and faultily critical, were called by Galen accidental or coincidental critical days. Thus Galen observes, (lib. ii. cap. 8. De Diebus Decretoris). "The most powerful of all is the seventh day: the fourth precedes it, having these two qualities, being a minor critical day, and an index to the seventh. Then come the fourteenth and eleventh, bearing the same proportion, and being as the same reciprocal to each other as the seventh and fourteenth. So the fourteenth is said to be similar to the twentieth, rarely the eighteenth, as connected with the twenty-first. The ninth, fifth, and third days are coincidental with these; the ninth being most frequently critical; the fifth coincides in critical power; and after it, the third. The sixth is elsewhere mentioned as a bad critical day. The thirteenth is the weakest of all critical days; but the most powerful of all non-critical days, inasmuch as it stands in a sort of medium between the two, &c."

In book i. chap. 2. Galen remarks, "on the twelfth and sixteenth I never saw a crisis occur; but I am unable to number the crises which I have witnessed on the seventh day. On the fifth day crises do take place, but with symptoms of difficult concoction, and no small danger, and they are not to be relied on, being imperfect, obscure, and prejudicial." Of the critical terminations happening on the sixth day, among the histories related by Hippocrates, there is not one which proves finally fatal; the greater number are fatal; and all the rest are imperfect, and followed by a relapse. Hence Galen calls the sixth a bad critical day; and he compares the seventh and sixth days to a king and a tyrant: the former, like a good prince, judging in mercy and clemency, and mitigating the punishment or favouring the acquittal of his subjects; the latter, gratified with their sufferings, and prolonging the infliction of punishment to the utmost.

With respect to the fourth, which is omitted to be mentioned in the list of critical days, in the aphorisms, much importance is given to it in other places. Hippocrates observes, in his prognostics: "But the physician must attend to all the appearances from the very first day of the disease, and consider the form of his observations on every fourth day; by which means he will not be unequipped with the course that the disease is about to take." Again, he says, in Aphorism 71, sect. 4., "when a crisis happens on the seventh day, there is a small red cloud in the urine on the fourth day, and other things are proportionate to this appearance." The fourth day, therefore, is, in general, only an indicating day to the seventh, and never proves finally critical, except in flight fevers, or in some which are extremely acute and rapid. (De Prognost.) It is obvious, then, that each critical day, in the quartenary and septenary periods, is connected as related to the succeeding critical day, in the quality of an indicator; the fourth as an index.
to the seventeenth, the seventh to the eleventh, and so on. Thus, if on a critical day, the patient finds himself better, although on the following day he relapses into his former state, the physician may expect a more remarkable remission on the subsequent critical day. On the contrary, if the patient find himself worse on a critical day, a still more unfavourable change is to be looked for on that which follows, although during the intermediate days the symptoms become milder.

This doctrine had an extensive influence over the practice of the ancients, who watched these days with particular attention, and almost holpened medical philosophy, lest they interrupt or derange the processes of nature in the constitution. Galen is minute in the detail of circumstances, by which such a prejudicial interruption or derangement may be occasioned. (D. Dib. Decret. lib. i. cap. 2.) The crises, which occur on the coincidental critical days, viz. the third, fifth, sixth, and ninth, and which are imperfect, and not to be depended on, were attributed to some pernicious interference of this fort, or to a fresh paroxysm of the disease, and were considered as anticipations of the proper critical days, on which the regular unexcited operations of nature would have terminated the disease. For the process of concoction requires a certain time to be completed, says Van Swieten, purifying the humoral hypothesis. But as it is improper to open an inflamed part before the matter is completely formed; so likewise evolutions made in fevers, before nature has subdued and separated the morbid from the healthy humours, can hardly be of any service, because they remove only part of the morbid matter, whence a return may be expected from what remains, &c. (Commentaries, Aphi. 741.) The coincidental critical days are most numerous in the first septenary, or week, because, according to the ancients, the violence of fevers which run their course in so short a time as one week, often disturbs the crisis which ought to happen only on the 4th or 7th day. In the second septenary, the ninth is esteemed almost the only coincidental critical day; and after the fourteenth day, the coincidental days are of little consequence, the crises generally occurring on the true critical days. We shall say nothing respecting the critical days after the twentieth and twenty-fifth, although much is laid by the ancients, even beyond the hundredth day; as it is confessed that they are few, and not easily assigned to a particular day.

Although this doctrine of critical days was generally adopted among the ancients, it was rejected by some. Herophilus, as Galen informs us, denied its truth; and Aelopides deemed it idle and doubtful. Celsus coincides with them, and denies it, on account of its inconsistency in itself; intimating also that it is a doctrine taken up by those physicians, who, for the sake of gain, wish to visit a great number of patients; since it is much cheaper to count days, even without seeing the patient, than to fit by him, and watch the symptoms as they change. (De Medicina, lib. iii. cap. 4.) The inconsistency, observed by Celsus, is this. Hippocrates considers the fourth day in each septenary as critical; hence the fourth, and the eleventh (taking the 8th as the first of the second septenary) are critical. But he affinuates the seventeenth with these as a fourth; whereas the 17th is only the third of the 3d septenary; for the eleventh is the 5th from the seventeenth; but the seventeenth is only the 4th from the fourteenth. This also makes the twentieth the half of the 3d septenary, instead of the twenty-fifth.

Various conjectures were entertained respecting the causes of these periodic movements in fevers. Some attributed them to the harmony of numbers, according to the Pythagorean philosophy, and Celsus and others have conceived that Hippocrates was swayed by this abstract doctrine. But Van Swieten states the irregularity, just related, as a proof that Hippocrates deduced his numbers from a faithful observation of crises. Galen imagined that the crises of fevers were caused by the changes of the moon; and this notion has been also entertained by Dr. Jackson and some other modern physicians.

Such is the doctrine of critical days delivered by the ancients, as observed in Greece and Asia Minor. The crises of those climates being very different from those of our own, we cannot expect the doctrine to apply here. Although changes for the better or worse are often well marked, yet they are rarely preceded by those perturbations of the constitution which belong to a complete crisis. The following list of well marked terminations, in a hundred and twenty cases of the contagious malignant fever of this country, is given by Dr. Willan in his "Reports on the Diseases of London," p. 233.

<table>
<thead>
<tr>
<th>Days of Fever</th>
<th>Number of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th</td>
<td>Six</td>
</tr>
<tr>
<td>5th or 6th</td>
<td>Three</td>
</tr>
<tr>
<td>7th</td>
<td>Ten; one case fatal.</td>
</tr>
<tr>
<td>8th and 9th</td>
<td>Five; two cases fatal.</td>
</tr>
<tr>
<td>10th and 11th</td>
<td>Ten; two cases fatal on the 10th night; three on the 11th day.</td>
</tr>
<tr>
<td>12th</td>
<td>Twelve; one case fatal.</td>
</tr>
<tr>
<td>13th</td>
<td>Five; one case fatal.</td>
</tr>
<tr>
<td>14th</td>
<td>Thirty; one case fatal.</td>
</tr>
<tr>
<td>15th</td>
<td>Two</td>
</tr>
<tr>
<td>16th</td>
<td>None</td>
</tr>
<tr>
<td>17th</td>
<td>Fourteen.</td>
</tr>
<tr>
<td>18th</td>
<td>One, fatal.</td>
</tr>
<tr>
<td>19th</td>
<td>One, fatal.</td>
</tr>
<tr>
<td>20th</td>
<td>None</td>
</tr>
<tr>
<td>21st</td>
<td>Twelve.</td>
</tr>
<tr>
<td>22nd</td>
<td>Three.</td>
</tr>
<tr>
<td>23rd</td>
<td>Two</td>
</tr>
<tr>
<td>24th</td>
<td>Three.</td>
</tr>
<tr>
<td>25th to 40th</td>
<td>Two</td>
</tr>
</tbody>
</table>

Here we find the two septenaries, and the 17th the most complete critical days, and the proper third septenary, or 21st, also critical; but no crises on the 20th, or third septenary of Hippocrates. On one of the days, in which Galen never saw a crisis, viz. the 16th, none occurred; but the other, the 12th, was here the third in critical quality. If the regular crises are as easily deranged as the ancients affirm, this list will rather tend to confirm the doctrine than otherwise; and the 12th and 21st may perhaps be the 11th and 20th postponed. But it must be remembered that, in the fevers of this country, the time of commencement is frequently obscure, and not to be ascertained; and that true crises are rare. A mere list of terminations of fever, therefore, such as that published in the second Report of the House of Recovery at Dublin, are of no value, as illustrations or refutations of the ancient doctrine. See Crisis and Concoction.

CRITICISM, the art of judging concerning discourse and writings. See Judgment.

Some define criticism, more amply, the art of judging of a history, or a work of genius, with the various incidents there met with, their style and authors.

On which footing, M. le Clerc fecoms to have given a defective idea of criticism, when he defines it simply the art of entering into the meaning of ancient authors, and of mak-
of its kind, and too well known to need any encomium. After Horace arose Quintilian, Cicero’s admirer and follower, who, as by his works, not only learned and ingenious, but an honest and worthy man. The latter Latin rhetoricians need not be mentioned, as they have not contributed much towards the illustration of the subject of philosophical criticism. Among the cultivators of "historical criticism," we find a tribe of scholars, commentators, and explainers. These naturally attached themselves to particular authors; Avitareus, Didymus, Eutuchius, and many others bestowed their labours upon Homer; Proclus and Tzetzes upon Hesiod; the fame Proclus and Olympiodorus upon Plato; Simplicius, Ammonius, and Philotheus upon Aristotle; Ulpian upon Demosthenes; Macrobius and Attalus upon Cicero; Caligernus upon Theocritus; Damaclus upon Terence; Servius upon Virgil; Acer and Porphyrio upon Horace; and so with respect to others, as well philosophers, as poets and orators. To these scholars may be added the several collectors of Lexicons; such as Hezychius, Philoxenus, Sidus, &c. and also the writers upon grammar, such as Apollonius, Priscian, Sophistus, Charinus, &c. All these have completed, by their affability and labour, another species of criticism, which, by way of distinction from the former, may be denominated "historical criticism." When the Roman empire sunk through the west of Europe, an age succeeded of legends and crusades. At length, after a long and barbarous period, when the shades of monkery began to retire, and the light of humanity once again to dawn, about the time of Charlemagne and his sons, the art alo of criticism infenibly revived. The authors of the philosophical part were not, indeed, many in number. Of this rank, however, among the Italians were Vida, and the elder Scaliger; among the French were Rapin, Bonhouns, Boiulca, and Boff, the most methodical and accurate of them all. In our own country, the nobility may be said to have distinguished themselves, among whom we may mention lord Rolcommon, in his "Essay upon translated Veri," the duke of Buckingham in his "Essay on Poetry," and lord Shaftesbury in his treatise entitled "Advice to an Author;" and to these we may add Pope in his "Essay upon Criticism." Although the number of philosophical critics among the moderns may be comparatively small, the writers of historical or explanatory criticism have been in a manner innumerable. Such were in Italy, Bernardus, Felixus, Victorius, and Robertus; in the Higher and Lower Germany, Erasmus, Syrburgius, Le Clerc, and Fabricius; in France, Lambin, Du Valt, Harduin, Cappernorius; in England, Stanley, editor of Effylus, Gataker, Davis, Clarke, Bentley, &c. &c. Among the compilers of Lexicons or Dictionaries we may mention Charles and Henry Stephens, Favorinus, Conflante, Budaus, Cooper, Faber, Voifius, &c. &c. To these we might add the authors on grammar, in which subjéct the learned Greeks, when they quitted the East, led the way: Mofcopulus, Cryforolus, Læcaris, Théodore, Geza; then in Italy, Laurentius Valla; in England, Grocin, and Linacre; in Spain, Sanctius, professor of rhetoric and of the Greek tongue in the university of Salamanca, towards the end of the 15th century; in the Low Countries, Vofius; in France, César Scaliger, by his residence, though a native of Italy; and the Miffons, de Port Royal. Among modern critics of the explanatory kind, are lexicographers, grammarians, and translators; among whom Mr. Harris (abi supra) has mentioned Mr. T. Warton, Mr. Tyrwhit, Mr. Upton, Mr. Addition, Dr. Warton, and Mrs Montague. The dictionaries, says the same writer, of Mithew, Skinner, Spelman, Samner, Junius, and Johnson, are well known and justly esteemed.
teemed. Dr. Lowth, and his admirable trait on grammar, are noticed with distinguished commendation. Among translators, our author enumerates Meric Casaubon, Mrs. Carter, and Mr. Sydenham. To these, he says, may be added the respectable names of Melmoth and of Hampton, of Franklin and of Potter; others might have been added if the author had not recollected the trite, though elegant admonition,

“—— Fugit irreparabile tempus,
  Singula dum capi circumvexit annos.”

Virgil.

The critics of our own times have been innumerable; but it might appear invalid to feebly select names of recent, and more especially of living authors, out of the numerous class that must present itself to every one’s own recollection.

Upon the whole, it must appear that criticism does, indeed, suppose an uncommon stock of knowledge of the subject wherein it is employed; but that criticism itself is nothing else but good sense perfected by grammar and logic.

We may distinguish divers sorts, or branches, of this art; as,

**Criticism, philological**, or the art of judging of opinions and hypotheses in philosophy.

**Criticism, theological**, the art of judging of explicatins, of doctrines, of faith, &c.

**Criticism, political**, the art of judging of the means of governing, acquiring, and preferring states.

But the ordinary use of the word is restrained to

**Criticism, literary**, which, however, is of great extent, as it takes in the art of judging of facts; a branch of criticism, which regards not only history, but also the discernment of the real works of an author, the real author of a work, the genuine reading of a text, and the art of discovering expurgations, monstrosities, ehanges, interpolated passages, &c.

The other parts of literary criticism comprehend the art of judging of works of genius, their excellencies and defects.

Mr. Harris (ubi supra) divides this kind of criticism into three species, the philological, treating of the principles, and primary causes of good writing in general; the historical, being conversant in particular facts, customs, phrases, &c.; and the corrective, subdivided into the authoritative, which depends on the collation of MSS. and the best editions, and critical, depending on the sagacity and erudition of editors. We have also

**Criticism, grammatical**, or the art of interpreting and discovering the words and meanings of an author.

**Criticism of Antiquities**, consists in distinguishing genuine medals, and the different taste and spirit found among them, according to the different people, the different country, and the different times wherein they were struck; the distinguishing between what is old, and what struck; what has been rejected, and repaired or added, from what is really antique; the genuine from the spurious, &c.; and to decipher and explain them, &c.

**Criticism, Sacred**, in general, is that employed in ecclesiastical matters, the history of the church, the works of the fathers, councils, lives of the saints, &c. But more particularly what concerns the books of the Holy Scriptures, and the canon thereof.

To this head we may refer Conjectural Criticism, for which see the article Conjecture. In connection with this part of the subject, we may mention that species of criticism which the ingenious Mr. Harris (ubi supra) called the corrective. All ancient books, having been preferred by transcription, have been liable, through ignorance, negligence, or fraud, to be corrupted in three different ways, viz. by retrenchments, by additions, and by alterations. As a remedy to these evils, corrective criticism was introduced. The business of this, at first, was carefully to collate all the various copies of authority, and then, from the variety of readings thus collected, to establish by good reason the true, or the most probable. In this sense such criticism may be denominate not only corrective, but authoritative. In ancient times various readings have been noted, in the text of Homer, and in that of Aristotle; and this latter has been examined by his commentators, Ammonius and Philonous; and Aulus Gellius has noticed the fame as to Roman authors; but since the revival of literature, correction has been a more extensive business, and has employed, for centuries, the pains of the most laborious, and the wits of the most acute critics. Many of the learned men already enumerated were not only famous as historical critics, but as corrective. Such were the two Scaligers, the two Casaubons, Salmasius, the Heinlei, Gravius, the Gronovius, Burman, Kultur, Waffe, Bentley, Pearce, and Markland; to whom we may add Tate, Taylor, and Upham. This latter kind of criticism has been too often abused, and extended by conjecture to an undue extreme (see Conjecture); and authors have been treated, like anatomical subjects, with a view to the display of the skill and abilities of the artist; so that the design of various editions seems to have been merely the exhibition of the wonderful sagacity and erudition of an editor. The joy of the task has been the honour of mending, while corruptions were fought with a more than common attention, as each of them afforded a testimony to the editor and his art. “Critics,” says Mr. Harris, (if I may be allowed the metaphor,) “are a sort of masters of the ceremony in the court of letters, through whose assistance we are introduced into some of the first and best company. Shall we even, therefore, by idle prejudices against pedantry, verbal accuracies, and we know not what, come to slight their art, and reject them from our favour? To this we do not think so; those clays, with whom criticism converses, become content to read them in translations, or (what is still worse) in translations of translations, or (what is worse than that) not to read them at all. And I will be bold to assert, if that should ever happen, we shall speedily return into those dark ages, out of which we happily emerged upon the revival of ancient literature.”

**Criticism, Musical.** As music may be defined the art of pleasing by the succession and combination of agreeable sounds, every hearer has a right to give way to his feeling, and be pleased or dissatisfied without knowledge, experience, or the list of critics; but then he has certainly no right to inflict on others being pleased or dissatisfied in the same degree. We can very readily forgive the man who admires a different music from that with which we are pleased, provided he does not extend his hatred or contempt of our favourite music to ourselves, and imagine that on the exclusive admiration of any one style of music, and a close adherence to it, all wisdom, taste, and virtue depend.

Criticin in this art would be better taught by specimens of good composition and performance than by reasoning and speculation. But there is a certain portion of enthusiasm connected with a love of the fine arts, which bids defiance to every curb of criticism; and the poetry, painting, or music, that leaves us on the ground, and does not transport us into the regions of imagination beyond the reach of cold criticism, may be correct, but is devoid of genius and passion. There is, however, a tranquil pleasure, short of rapture, to be acquired from music, in which intellect and
CRITICISM.

fenation are equally concerned; the analysis of this pleasure is, therefore, the subject of the preface short essay; which, it is hoped, will explain and apologize for the critical remarks which have been made in the course of this history, on the works of great masters, and prevent their being confounded into pedantry and arrogance.

Indeed, musical criticism has been so little cultivated in our country, that its first elements are hardly known. In justice to the late Mr. Axion, it must be owned, that he was the first, and almost the only writer, who attempted it. But his judgment was warped by many prejudices. He excelled Rameau and Geminiani at the expense of Handel, and was a declared foe to modern German Symphonies. There have been many treatises published on the art of musical composition and performance, but none to instruct ignorant lovers of music how to listen, or to judge for themselves. So various are musical stylists, that it requires not only extensive knowledge, and long experience, but a liberal, enlarged, and candid mind, to discriminate and allow to each its due praise:

"Nullius addictus jurare in verba magistrorum."

A critic should have none of the contradictions and narrow partialities of such as can see but a small angle of the art; of whom there are some so bewildered in trigon and complicated contrivances, that they can receive pleasure from nothing but canonical answers, imitations, inversions, and counter-subjects; while others are equally partial to light, simple, frivolous melody, regarding every species of artificial composition as mere pedantry and jargon. A chorus of Handel and a graceful opera song should not preclude each other: each has its peculiar merit; and no one musical production can comprise the beauty of every species of composition. It is not unusual for disputants, in all the arts, to reason without principles; but this, we believe, happens more frequently in musical debates than any other. By principles, we mean the having a clear and precise idea of the constituent parts of a good composition, and of the principal excellencies of perfect execution. And it seems, as if the merit of musical productions, both as to composition and performance, might be estimated according to De Piles' rule-yard, or tell of merit among painters. If a complete musical composition of different movements were analyzed, it would perhaps be found to consist of some of the following ingredients: melody, harmony, modulation, invention, grandeur, fire, pathos, talent, grace, and expression; while the executive part would require neatness, accent, energy, spirit, and feeling; and, in a vocal performer, or instrumental, where the tone depends on the player, power, clearness, sweetness; brilliancy of execution in quick movements, and touching expression in slow.

But as all these qualities are seldom united in one composer or player, the piece or performer that comprises the greatest number of these excellencies, and in the most perfect degree, is entitled to pre-eminence: though the production or performer that can boast of any of these constituent qualities cannot be pronounced totally devoid of merit. In this manner, a composition, by a kind of chemical process, may be compounded as well as any other production of art or nature.

Prudent critics, without science, seldom venture to pronounce their opinion of a composition, decisively, till they have heard the name of the master, or discovered the sentiments of a professor; but here the poor author is often at the mercy of prejudice, or envy. For the opinion of professors of the greatest integrity is not equally infallible concerning every species of musical merit. To judge minutely of singing, for instance, requires study and experience in that particular art. Indeed, we have long suspected some very great instrumental performers of not sufficiently feeling or respecting real good singing. Rapid passages neatly executed from to plaife them infinitely more than the finest manifofa di voce, or tender expression of flow notes, which the sweetest voice, the greatest art, and most exquisite sensibility, can produce. They frequently refer all excellence so much to their own performance and perfections. that the advertisements, qualities of fingers who imitate a hautbois, a flute, or violin, are rated higher than the colouring and refinements that are peculiar to vocal expression; which instrumental performers ought to feel, respect, and try to imitate, however impossible it may be to equal them: approximation would be something, when more cannot be obtained. Of composition, and the genius of particular instruments, whole opinion, but that of composers and performers, who are likewise polluted of probity and candour, can be trusted? There are, alas! but too many professors who approve of nothing which they themselves have not produced or performed. Old musicians complain of the extravagance of the young, and the dryness and ingenuity of the old.

And yet, among the various styles of composition and performance, the partial and capricious taste of lovers of music, and the different sects into which they are divided, it seems as if the following criteria would admit of little dispute.

In church music, whether jubilation, humility, sorrow, or contrition are to be expressed, the words will enable the critic to judge; but of the degree of dignity, gravity, force, and originality of the composition, few but professors can judge in detail, though all of the general effect.

In hearing dramatic music, little attention is pointed by the audience to any thing but the airs and powers of the principal singers; and yet, if the character, passion, and importance of each personage in the piece are not distinctly marked and supported; if the airs are not contrasted with each other, and the part of every singer in the same scene specifically different in measure, compass, time, and style, the composer is not a complete master of his profession.

Good singing requires a clear, sweet, even, and flexible voice, equally free from nasal and guttural defects. It is but by the tone of voice and articulation of words that a vocal performer is superior to an instrumental. If in swelling a note the voice trembles or varies its pitch, or the intonations are false, ignorance and science are equally offended: and if a perfect shake, good taste in embellishment, and a touching expression be wanting, the singer's reputation will make no great progress among true judges. If in rapid divisions the passages are not executed with neatness and articulation; or in adagios, if light and shade, pathos, and variety of colouring and expression are wanting, the voice may have merit of certain kinds, but is still deficient from perfection.

Of perfect performance on an instrument, who can judge accurately but those who know its genius and powers, defects and difficulties? What is natural and easy on one instrument, is often not only difficult but impracticable on another. Arpeggios, for instance, which are so easy on the violin and harpsichord, are almost impossible on the hautbois and flute. And the rapid iteration of notes which give the violin player such little trouble, are impracticable on the harpsichord with the same finger. Those instruments of which the tone and intonation depend on the player, as the violin, flute, hautbois, &c., are more difficult than harps and keyed-instruments, where the player is neither answerable for
for the goodness of the tone nor truth of intonation. However, there are difficulties on the harpsichord of another kind, to balance the account, such as the hands playing two different parts in dissimilar motion at once, and often three or four parts with each hand. Of a good shake, a sweet tone, and neat execution, almost every hearer can judge; but whether the music is good or bad, the passages herd or easy, too much or too little embellished by the player, science and experience can only determine.

In chamber music, such as sonatas, single songs, solos, trios, quartets, concertos, and symphonies of few parts, the composer has laid exercise for reflection and intellect, and the power of pleasing in detached pieces by melody, harmony, natural modulation, and ingenuity of contrivance, with fewer restraints, and fewer occasions for grand and striking effects, and expression of the passions, than in a connected composition for the church or the stage. Many an agreeable lesson, solo, sonata, and concerto, has been produced by musicians who would be unable to compose a Te Deum for voices and instruments, or to interest and satisfy an audience during a single act of an opera. We never have heard of Corelli, Geminiani, or Tartini attempting vocal melody, and the music merely instrumental of the greatest vocal composers is often meagre, common, and infipid. There are limits set to the powers of every artist, and however universal his genius, life is too short for universal application.

It was formerly more easy to compose than play an adagio, which generally consisted of a few notes that were left to the taste and abilities of the performer; but as the composer seldom found his ideas fulfilled by the player, adagios are now made more chaste and interesting in themselves, and the performer is left to put the torture for embellishments.

In 1752, Quantz claffed quartettos at the head of instrumental music, calling them the touchstone of an able composer; adding, that they had not yet been much in fashion. The divine Haydn, however, has since that time removed all kind of complaint on that account, having produced such quartets for number and excellence, as have never been equalled in any species of composition at any other period of time.

In composing and playing a solo, the least complicated of all music in parts, much knowledge, sedition, invention, and refinement are necessary. Besides consulting the genius of the instrument and power of the performer, new, interesting, and pleasing passages must be invented, which will at once please and surprize the hearer, and do honour to the composer and performer. And who can judge of the origin of the composition, its fitness for the instrument, or degree of praise due to the performer, but those who have either studied composition, practised the same instrument, or heard an infinite variety of music and great performers of the same kind?

The famous question, therefore, of Fontenelle: "Sonate, que veux-tu?" to which all such recur as have not ears capable of vibrating to the sweetness of well-modulated sounds, would never have been asked by a real lover or judge of music. But men of wit of all countries being accustomed to admiration and reverence in speaking upon subjects within their competence, forget, or hope the world forgets, that a good poet, painter, physician, or philosopher, is no more likely to be a good musician without study, practice, and good ears, than another man. But if a lover and judge of music had asked the same question as Fontenelle; the Sonata should answer: "I would have you listen with attention and delight to the ingenuity of the composition, the neatness of the execution, sweet notes of the melody, and the richness of the harmony, as well as to the charms of refined tones, lengthened and polished into passion."

There is a degree of refinement, delicacy, and invention which lovers of simple and common music can no more comprehend than the Abbe's harmony. It is only understood and felt by such as can quit the plains of simplicity, penetrate the mazes of art and contrivance, climb mountains, dive into deep, or evade the lashes in search of transcendent and exotic beauties with which the monstrous melody of popular music has not yet been embellished.

What judgment and good taste admire at first hearing, makes no impression on the public in general, but by dint of repetition and habit. A syllabism that is very plain to a logician, is incomprehensible to a mind unaccustomed to associating and combining abstract ideas. The extraneous, and seemingly forced and affected modulation of the German composers of the present age, is only too much for us, because we have heard too little. Novelty has been acquired, and attention excited, more by learned modulation in Germany, than by new and difficult melody in Italy. We dislike both, perhaps, only because we are not gradually arrived at them; and difficult and easy, new and old, depend on the reading, hearing, and knowledge of the critic. The most easy, simple, and natural is new to youth and inexperience, and we grow nice and faddish by frequently hearing compositions of the first class, exquisitely performed.

CRITONIA, in Botany. Gert. See KUNIA.

CRIVELLARI, Bartolomeo, in Biology, an engraver, born at Venice about the year 1725. He was much employed in that city by Wagner, for whom he engraved several plates. Some of the prints for the work entitled, "Hittito di Bologna," are likewise by him, particularly those four beautiful conversation-pieces from Niccolo dei Abbati. Huber. Manuel des Arts.

CRIVELLI, Angelo Maria, a Milanese painter, celebrated for his skill in painting cattle. He was called il Crivellone to distinguish him from his son Jacopo, who was a painter of birds and fishes. Angelo Maria died in 1738, Jacopo about the year 1760. Oriand. Lanzi.

CRIVELLI, Carlo, a Venetian painter of the 15th century, who was the disciple of Jacobello del Fiore. He travelled many years, working wherever he came, and at length arrived in confidence at Alco. His compositions are numerous, but the bell of them are his small historical pictures, in which he introduces landscapes touched with great delicacy; nor are his figures void of grace or expression, though he was less correct as a designer than excellent as a colorist. Some of his pieces bear his name at length, and their respective dates from 1450 to 1474.

In the church of St. Sebastian at Venice, is a picture of Pope St. Fabiano in his pontifical habit, and the marriage of St. Catharine by the hand of this artist. Lanzi. Storia Pitt.

CRIVITZ, or KRIWITZ, in Geography, a small town of Mecklenburg Schwerm, in the ancient county of Schwerrin, which in 1573 and 1660 suffered very much by conquests, the houses being mostly built with wooden frames, the interfaces of which are filled with brick work.

CRUZMETOPON, in Ancient Geography, Asia, a promontory of the Tauric Chersonesus, and the most southern point of that peninsula.—Asia, a promontory of the Isle of Cret.

CRUS, a river of the Peloponnesus, in Achaia, which had its source in the mountains above Pallene, and discharged itself into the sea, before the town of Egves, according to Pausanias.

CRUXIA, a town of Italy, in Liguria, situated between .
Aqua Canalicum, according to the Itinerary of Antonine.

CRIZZELLING, in the Glass Trade, a kind of roughness arising on the surface of some kinds of glasses. This was the fault of a peculiar form of glasses made in Oxfordshire, and in other places, of black flints, a crystallized sand, and a large quantity of nitre, tartar, and borax. The glasses thus made are very beautiful, but, from the too great quantities of the salts in the mixture, is subject to crizzel; that is, the flakes in the mixture, from their too great proportion, are subject, either from the adventitious nitre of the air from without, or from warm liquors put in them, to be either increased in quantity, or dissolved, and thereby induce a feabiness, or roughness, irrecoverably clouding the transparency of the glasses. This is what was called crizzeling; but by using an Italian white pebbles, and abating the proportions of the salts, the manufacture is now carried on with advantage, and the glasses made with these flats is whiter than the best Venetian, and is subject to no faults. Platt's Oxfordshire, p. 278.

CROAGAN-KIN SHELLY, in Geography, a mountain in the county of Arklow, Ireland, elevated 850 feet above the level of the sea.

CROAGH-PATRICK, or Crow-Patrick, a mountain of the county of Mayo, Ireland, situated on the south of Clew-bay. This is by many esteemed the highest mountain in Ireland, rising in a conical form 2660 feet above the level of the sea. This mountain is celebrated by the natives as that from which St. Patrick drove all venomous baits into the sea. On the summit there is an altar much frequented by Catholic pilgrims. Lattoupant's Rambles, &c.

CROAGMORE, a mountain of Antrim county, Ireland, elevated 600 feet above the level of the sea.

CROARA, a town of Italy, in the duchy of Modena, 18 miles S.W. of Modena.

CROATIA, a country of Europe, situated between the 14th and 17th degree of E. longitude, and the 45th and 47th of N. latitude, belonging to the empire of Austria. It is a part of the ancient Illyricum. In the middle ages, Croatia, together with Dalmatia, formed a kingdom subject to the emperors of the East. This kingdom, in the eleventh century, devolved to Hungary. The Hungarians call it Hovath Orsozag. Zagrab or Angram on the river Save is the capital. An Austrian vicerey governs Croatia jointly with Sclavonia and Hungarian Dalmatia.

Croatia extends from the river Drave to the Adriatic, about 80 miles in length, and 70 in breadth. It is bounded to the north by Sclavonia, to the east by Bosnia, to the south by Dalmatia and the Adriatic, and to the west by the Austrian provinces of Stiria and Carniola. Its principal rivers are the Save and the Una.

The whole country is divided into two parts: Croatia on this side of the Save, Croatia Cifarnica, which is also called Upper Sclavonia, and subdivided into five counties, and Croatia beyond the Save, Croatia Transfavana, or Croatia Proper, which is subdivided into Hungarian or Military Croatia, and the Banat, Banata Croatia, and Turkish Croatia, on the other side of the river Una.

Military Croatia is one of the five principal divisions of the military frontiers of Austria in Hungary. This district commences at the most western corner of Dalmatia on the Adriatic, and runs through Croatia, Sclavonia, the Banat of Temsevar, and Transylvania, into the Bucovina. This long tract of land, which surrounds Hungary on the south and on the east, has about 520,000 inhabitants in the fifth part of which is military. Kereyfurth in his "Introductio," &c. Vienna, 1759, divides it into six districts, &c. Cardiadi, which has four regiments: Banat, which has two; Waradzin, which has two; Sclavonia, which has three; Banat of Temsevar, which has two; and Transylvania, which has three; in all sixteen regiments of infantry, of 3825 men, with 480 hussars attached to each regiment. The whole military district was formerly without any civil magistrate; but its military constitution has been abolished by the emperor Joseph II., and the Croatians are now drafted into the regular regiments, like the rest of the subjects of Austria.

Croatia, according to Mr. de Locca's Statistical Tables of 1756, contains 250,000 inhabitants, or 500 individuals per square mile.

CROAT, or CROATIAN, the inhabitants of Croatia, derive their origin from the Sclavonians and Slavi, and settled in Croatia under the reign of the emperor Heraclius. Their ancient name was Hroutet, or Hrouatse, of which the Greeks made Chrohatae. Of all the Illyrian nations they have the greatest affinity in their language with the Poles. Their manners, religion, and customs, are similar to those of the Sclavonians and Transylvanians their neighbours. They are the successors of those Daci, or Dacians, who were at first the terror, and afterwards the strength, of the Roman armies; and have maintained their reputation for bravery in modern warfare, particularly in the seven years' war between Austria and Prussia, which terminated in 1703. The best general officers of the Austrian army, as Laudon, de Wied, and Kleefeldt, were born in the Croatian regiments. Although the Croats have lost their ancient military constitution, they are still excellent soldiers, generally employed in the van and rear guards. They are also known by the name of Pourdours; which see.

CROBIALUS, or crobianum, in Ancient Geography, a small town of Asia, situated near the Euxine sea, towards Paphlagonia.

CROBYZI, a people who occupied the district beyond the river Axios, according to Pliny, and the banks of the Iter, according to Steph. Byz. They were a people of Thrace, between mount Hemus and the Euxine sea, according to Athenzus, and Ptolomey refers them to Lower Moesia.

CROCALA, an island of sand, which Pliny and Aristippus places near the mouth of the river Indus.

CROCALLIS, in Natural History, the name given to the ancients to a stone famous for its virtues against poisons, and venomous bites. All the description Pliny gives of it is, that it was of the size and shape of a cherry.

CROCARDS, an old name given by the Irish to a certain kind of money brought over into that kingdom from France, and other parts beyond the seas, and uttered there for pence, though not really worth so much as a halfpenny. They were a small sort of coin, made of a mixture of copper, sulphur, and a small quantity of silver, and were called by several other names, as mitres, lions, rogers, and the like, from the figures they were impressed with. They were current in Ireland, and in some parts of England, a great many years; but were afterwards despised, and prohibited importation, both in England and Ireland, under the penalty of the forfeiture of life and effects. At this time, mints were set up in Dublin, for the coining of good money, and, in a few years, the whole quantity of the crocards was destroyed. See Pollards.

CROCE, Baldassare, in Biography, a Bolognese painter, born in the year 1553. He is generally said to have been the scholar of Annibale Carracci; but this is disputed by Baglione, who informs us, that so early as the pontificate of Gregory XIII., he was employed in several public works at Rome. The cupola of the church of Gesu
was painted by this artist; and in the church of S. Sufiana are several large stories in fresco by him, which are of a style natural and facile. Although he can scarcely be called the scholar of Caracci, it is probable that he benefitted by his example during the long sojourn of that great master at Rome. Croce died in 1628, Baglione.

Croce, S. Girolamo di, a painter of some eminence, of the Venetian school, who flourished at the commencement of the 16th century. He was one of the first imitators of the manner of Giorgione and Titian. Many of his works are at Venice, amongst which "The Laid Supper," in the church of S. Martino, and "The Martyrdom of S. Lorenzo," a composition of many small figures, in the church of S. Francesco della Vigna, are worthy of notice. His works bear date from 1520 to 1549. Lanzi, Storia Pitt.

Croce, S. Pietro Paolo da, a painter who flourished at Padua, about the year 1591. Several of his pictures, evincing no small abilities, are to be seen in the churches of that city. Lanzi, Storia Pitt.

CROCEFISSAJO, Del. See Macchietti.

CROCE, in Geography, a lake of N. America, in New South Wales, which is crooked in proceeding from Portage la Loche in a westerly direction of 6 miles, though its whole length may be twice that distance; after which it contracts to a river that runs westerly for 10 miles; when it forms a bend, which is left to the south, and entering a portion of its waters called the "Graf's river," whose meandering course is about 6 miles, and in a direct line not more than half that length, where it receives its waters from the Great river, which then runs westerly 11 miles before it forms the "Knife-lake," whose direction is to the north of west. It is full of islands for 18 miles, and its greatest apparent breadth is not more than 5 miles. The name is several hundred yards long, and wide across the river. Its latitude is 55° 56' N. and longitude 106° 30' W. Two miles farther north is the commencement of the Crecce Rapid, which is a succession of cascades for about 3 miles, making a bend due south to the lake du Princeau; which see.

CROCHE, Fr. the character in Mycex which we call a gurner; which see.

CROCHES, among Hunters, the little buds about the top of a deer's horns.

CROCI, among Botanists, the apices, or small knobs, on the tops of flowers.

CROCIÀ, a bishop's or abbot's crozier, or palloral staff. See CROISER.

CROCIÀ S LAPIS, in Natural History a name given by some of the old authors to a species of agate, of a yellow colour, but deeper than the擦抹者, or wax-coloured agate, and approaching to what is called a fafcbron colour.

CROCIATONUM POETUS, in Ancient Geography, the capital of a people called Uselii, situated in the maritime part of Lyonnaise Gaul, according to the table of Ptolemy. Ptolemy mentions it; and it is generally supposed to be the present Carentan.

CROCINUM, a name given by the ancient physicians to a sort of oil of saffron, which is thus described by Dioscorides. Eight drams of saffron are to be put into three pints of infused oil, and they are to be stirred together several times in a day, for five days together; then the oil is to be separated from the saffron, and a like quantity is to be added to the fame saffron, and stirred about at times for three days; then this oil is to be cleaned off, and to it are to be added fifty ounces of powdered myrrh. These having been well stirred together, are then to be let by for use.

Some used an oil, impregnated with aromatics, in the composition of the crocinum; but that was usually esteemed but, which smelt the most strongly of saffron, or else of myrrh.

The crocinum was esteemed heating and narcotic; whence it was frequently prescribed by way of embrocation, or else held in the nose in fumes. It was also esteemed useful as a fuppurative, and to cleanse old ulcers: it was much esteemed also in hardness, obstructions, and other disorders of the uterus, being used with wax, narrow, and double the quantity of oil; for a glaucoma it was also used with success, when mixed with water, and the eyes mounted frequently with it.

CROCKET, (from crou, French, a look or fork,) one of the small ornaments which are usually placed along the angles of pinnacles, and on the outside of pediments, canopies, tabernacles, and cupolas, in the pointed style of architecture. The first idea of these ornaments seems to have been taken from the buds seen upon the boughs of trees and plants in the spring season, which, in many early instances, they resemble. In their subsequent and more perfect form, they evidently represent the opening leaves of the oak or vine, or of some other tree or plant. Beautiful specimens of them may be seen in the works of Carter, Halfpenny, &c. See GOTHIC and POINTED ARCHITECTURE.

CROCODILIA, in Ancient Geography, a town of the isle of Albion, on the route, according to Antonine's Itinerary, from Londinum to Lindum, or London to Lincoln, between Ad Ponten, near Southwell, and Lindum or Lincoln; 7 miles from the former, and 12 from the latter. The edifices of this station, which are very fine, are both in it.

CROCODILE, in Zoology, a species of lizard, being the largest of that kind; for a description and account of which, see LACERTA Crocodilis. Crocodilus in form, the arrangement of Gmelin, one of the general divisions of lacerta, characterized by a two-edged tail divided into segments, and a very short tongue.

Crocodilus, fustus. One of the greatest curiosities in the fossile world, which the late ages have produced, is the skeleton of a large crocodilus, almost entire, found at a great depth under ground, bedded in flode. This was in the possession of Linkius, who wrote many pieces in natural history, and particularly an accurate description of this curious fossile. It was found in the side of a large mountain, in the middle part of Germany, and in a stratum of a black fossile flode, somewhat like our common slate, but of a coarser texture, the same with that in which the fustus flode of many parts of the world are found. This skeleton had the back and ribs very plain, and was of a much deeper black than the rest of the flode, as is also the case in the fossile fishes, which are preferred in this manner. The part of the flode where the head lay was not found, this being broken off just at the shoulders, but that irregularly, so that, in one place, a part of the back of the head was visible in its natural form. The two shoulder bones were very fair, and three of the feet were well preferred; the legs were of their natural shape and size, and the feet preserved, even to the extremities of the five toes of each.

Crocodilus, Crocodilus, in Rhetoric, a cephalic and sophistical kind of argumentation, contrived to seduce the unwary, and draw them speciously into a snare.

It has its name, crocodile, from the following occasion, invented by the poets. A poor woman, begging a crocodile that had caught her son walking by the river side, to spare and reprove him, was answered that he would restore him, provided
provided should give a true answer to a question he would propone: the question was, Will I restore thy son or not? To this the poor woman replied, deceitfully answered, Thou wilt not: and demanded to have him restored, because she had answered truly. Thou lyest, says the crocodile: for if I restore him, thou hast not answered truly: I cannot therefore restore him without making thy answer false. Under this head may be reduced the propositions called mendacities, or inadverbs; which destroy themselves. Such is that of the Cretan poet: Omnes ad unum Cretensia fenera mentitur: All the Cretans to a man, always lie. Enter then the poet lies, when he affirms that the Cretans all lie, or the Cretans do not all lie.

Crocodile Town, or Megadon-oyos, in Geography, a town of Asia in the Roman empire, represented by lieutenant-colonel Symes, who visited it, as a place of considerable trade and importance. Its harbour contained no less than 100 large boats, and several smaller ones, lying at different flours which took in rice, onions, garlic, and oil, for the consummation of the capital. It stands on a very high bank, and has fewer religious buildings than any town which the colonel had seen of equal magnitude. In its vicinity are some neat farms, each containing 4 or 5 cottages, better built than hounet in towns generally are, and fenced round with wide cloisters to receive the cattle, in which there was great abundance. These fields are divided by thorn-hedges; the low grounds prepared for rice; and the higher planted with ingenious shrubs, or left for pasture.

Crocodiloides, in Botany, Vaill. See Atrac-


Crocodilopolis, in Ancient Geography, a town of Egypt, S.E. of the lake Moeris; the Greeks called it Arinoe; and it is succeeded by the modern Fatoum, built at the distance of about a league N.E. of its dilapidated walls. It derived its first name from the crocodiles which were fed and worshipped there. The preface of Arinoe, says Strabo, reverses the crocodile, and looks upon it as sacred. The priests prefer one of them in a particular lake, and they nourish it with bread, fish, and wine. Whily the crocodile is reposing himself on the banks of the lake, the priests approach him; and when one opens his mouth, another puts cakes, fish, and wine into it. After this repast the monster descends quietly into the water, and swims away. The Egyptians are said to have honoured the crocodile, because it was consecrated to Typhon, an evil genius whose fury they dreaded. They thought to calm his indignation, and avert the calamities with which he afflicted them, by honouring an animal which was his symbolical image. According to Diodorus (lib. i.) the crocodile was reverenced by the Egyptians upon account of their king, Menas, sometimes called Menes, and Maks. This prince, it is said, had been in great danger of being drowned; but was wafted through the water to land, by a crocodile. In memorial of this he built a city, which from this event was denominaled the city of the crocodile. This writer supposes that Menes really reigned over the Egyptians, because he stood at the head of their genealogical list: and he further imagines that the story was local, and that the event happened in the lake Moeris. The learned Breyer. (Annal. Mythol. vol. ii. p. 365.) supposes that Menes, the king of Egypt, was the Deus Luctus, and called also Mean, Maks, and Man; and the legend about a crocodile was taken from some symbolical representation in the city of the same name; and hence it was imposed to have happened in Egypt. The crocodile had many names, one of which was Campa, which signified an ark or receptacle; whence the perpetuity of the interpreted.
farrow; pale underneath, with a very prominent flattened mid-rib; style hanging out on one side between two of the segments of the corolla; stigmas deep orange, long, rolled in at the edges, notched at the summit. A native of Greece and Asia Minor. Its odorous aromatic stigmas are the saffron of the shops, for the sake of which it has been cultivated in its native countries from the earliest antiquity, and has long since been introduced into the western parts of Europe. In England it has given a distinguishing name to Saffron-Walden. See Saffron. 2. C. firstulaus, Salisb. Par. Lond. tab. 20. (C. autumnalis; Poir. 4. C. alpinus autumalis; Bauh. Pin. 65. Tourn. 350. C. montanum primus; Cluf. Hift. 209. with a figure.) "Bractæ two under the pericarp; (or in the language of Linnaeus, spathe two-leaved) border of the corolla slightly bearded; clofed and pitcher shaped at the base; stigmas deeply multiform." Salisb. Root bulbs, small, much depreffed. Leaves radical, narrow, linear-awl-shaped, fearcey rolled in at the edges, appearing at the fame time with the flower. Flowers purple, or deep blue; tube rather fhort, a little enlarged towards the fummit; divisions of the border lanceolate, deep; flamen little more than half the length of the border; anthers yellow, narrow, long, lanceolate, not arrow-shaped; stigmas very long, rifting above the flamines, gradually enlarging upwards, crenate or toothed at the fummit. It is the latest of the autumn crocuses, and in a mild feafon, and the beginning of December. A native of Spain, Portugal, Switzerland, and the fouth of France. 3. C. vulgaris florae Smith Flor. Brit. 41. Eng. Bot. 491. (C. multiandus; Poir. 5. C. speciosus; Von Bieberstein in Ann. Bot. 2. 404. C. pyreneum autumale; Cluf. Cur. Poll. 23. and Appen. alter. C. autumnalis florae minore; Bauh. Pin. 67.) "Stigma included in the flower, trifid; lobes mulfiform-licenated, pefcil-shaped, flower without leaves." Smith. Root bulbs, very feafal. Flowers purple-violet, opening early in October, and fading before the end of the month; flamines shorter than the divisions of the corolla; style longer than the flamines; stigmas orange-coloured, fcentless. Leaves not appearing before December, more creaf than thofe of the other species, paler, fearcey rivotate at the edges. A native of the Pyrenees, and of Georgia, between the Terek and the Kur. In England it occurs sparingly in fome old pastures and meadows, near Halifax, and in great profufion between Nottingham cafe and the Trent, in a meadow annualiy overfowed by the river. In confequence of a negligent obfervation, it was at first miilaken by the writer of the article for C. fativus, and thence that plant was erroneoufly supposèd to be a native of英格兰. 4. C. verus. Mart. 2. Poir. 1. Lam. Ill. Pl. 39. fig. 2. Willd. 2. Smith Fl. Brit. 40. Eng. Bot. Pl. 344. Jacq. Auth. App. tab. 36. β. Napolitanius; Bot. Mag. 865. (C. fativus β; Linn. Sp. Pl.) "Stigma included in the flower, trifid; lobes wedge-shaped, notched." Smith. Root bulbs, globular. Scale sin inch or two high, almoft triangular. Flowers generally purple, fometimes yellow or white; tube fender, very long, gradually enlarged towards the top; clofed at the mouth by a ring of glandular entangled hairs; border campanulate; segments elliptic-lanceolate, much shorter than the tube; three inner ones smaller; anthers yellow, arrow-shaped. According to La Marck the flamines are longer than the piillis; but they are not fo in his own figure to which he directly refers. A native of the Alps, Pyrenees, Italy, Spain, and Mount Atlas. In England it has been founded only in the meadows between Nottingham cafe and the Trent, growing with the preceding species, but always flowering in the spring. 5. C. latiflorus. Lam. Ill. 2. Poir. 2. (C. verus; Bot. Mag. 45. C. verus, latifolius, flavo floræ; Cluf. hift. 205, with a figure. C. verus, latifolius, flavo floræ; Bauh. Pin. 66. Tourn. 352.) "Stamina longer than the pili; border large, almost the length of the tube: Rosi roots bulbous, a little revolute, enclosed in flamine, foliaceous, bull-like membranes, clofey ribbed with fine parallel fberes, but not netted. Leaves radical, flat, narrow, linear, awl-shaped at the fummit, longer than the corolla, with a white, rather large longitudinal rib. Flowers always yellow; tube fender, enlarged towards the fummit; segments of the border oval-lanceolate, obube, erect; flamines shorter than the corolla; stigmas short, unequal, ftraited, thickened at the top, plaifed and curled. A native of Switzerland, flowering in March, a little earlier than the preceding species. 6. C. aureus. Smith Prod. 85. Fl. Greece. tab. 35. (C. verus, multiformis primus; Cluf. Pann. 285.) "Stigma included in the flower, trifid; lobes nearly fline, finely toothed; tunic of the root membranous." A native of Threee, found by Dr. Sibbhorp near Scuus. 7. C. fulceanus. Bot. Mag. Pl. 652. (C. verus, flavo-vario floræ; Cluf. hift. 205. Bauh. Pin. 66.) "Few-flowered; bulb confequently netted, with large irregular nerves; outer segments of the corolla, conftantly revolute near the tip; stigmas rising far above the anthers. A smaller plant than C.ibus, flowering earlier, and opening its flowers in all flates of the weather. Received by Clulius from Constantinople, about the year 1587. S. C. biflorus, improperly called the Scotch crocus by the English gardeners. Bot. Mag. Pl. 845. Bot. rep. Pl. 362. "Tunics of the bulb even furcated, hard, circinate-imbricated; mouth of the tube naked." Flowers whitifh; outer segments of the border marked on the outside with longitudinal purple breaks. Supposed to be a native of the East. 9. C. fulceanus florae. Bot. Mag. Pl. 938. (C. verus, flavo-flavus frutus; Park. par. 163. fig. 10. C. verus, latifolius, flavo-vario floræ; Rait. hift. 1174. n. 8.) "Tunics of the bulb membranous, brown, thin, finely fibrous-ribated; segments of the corolla spreading equally; anthers small, arrow-shaped, pale; stigmas unequal, rising far above the anthers." Flowers pale yellow; three outer segments of the corolla narrower, marked with three broad, oval-dentate breaks which throw out lateral veins of the same colour; three inner ones broader, dark purple on the outside near the bottom; but marked with similar breaks. Leaves narrow, long, appearing before the flower. It never produces seeds in our climate, but propagates itself most profudefly by off-sets. There is a permanent variety, in which the whole of the flower is of a uniform colour. Obf. The crocus has been fo long and fo extensively cultivated, that it is not easy to diftinguish the original species from the accidental varieties. The old botanifs frove to make as many forts as piffible. C. Bauhin reckons twenty-nine; Tournfort, forty-fix. Linnaeus, on the other hand, reduces them all to one, and supposes the vernal and the autumnal, or officinal crocus, to be only varieties, notwithstanding the manifold difference in the form of their ligmas, leaves, and bulbs, as well as in the time of their flowering; very differently, as professor Mortyn jully observes, from what he has done with respect to Hemocallis, which he has divided into two fpecies, though they differ only in their size, the colour of their flowers, and a little in the time of their flowering. Most modern botanifs have thought the vernal and autumnal kinds particularly different, and several other species, apparently dilibit, have gradually been added. Mr. Salisbury of Nillill, whose accuracy of obfervation, and acuteness of differenfion, are well known, think's he has aftemained
Crocus

ascertained twelve well ascertained species, but has not yet communicated his ideas concerning them to the public. See Annals of Botany, vol. 1. p. 125.

*Crocus flavus fruticosus impostria*, tubo brevi; Roy. See Ixia bulbosum.

*Crocus folius & radix foronurea*; Plum. See Hypothesis decumenta.


*Crocus filiflorus zeazymicus*; Herm. Burm. See Mesohylon capitulatum.

*Crocus versus angustifolius quartus*; Claf. See Ixia bulbosum.

Crocus, in Gardening, comprehends plants of the low flowering ornamental bulbous-rooted perennial kinds; of which, the sorts mostly cultivated, are the autumnal or common official crocus, and the spring crocus.

The first sort has a roundish bulbous root, as large as a small nutmeg, being a little compressed at the bottom, and covered with a coarser, brown, netted skin; having many long fibres sent out from the bottom of the bulb, which strike pretty deep into the ground; the flowers come out from the upper part of the root, which, with the young leaves, whose tops just appear, are closely wrapped about by a thin spathe or sheath, that parts within the ground, and opens on one side. The tube of the flower is very long, arising directly from the bulb without any footstalk, being divided at top into five segments which are equal, and of a purple blue colour. A roundish germ is situated in the bottom of the tube, which supports a slender style not more than half the length of the petal, being crowned with three oblong golden figmas, spreading afar, each way, which constitutes the stamens. It flowers in October, and the leaves continue to grow all winter; but it never affords seeds in this climate.

Of this the varieties are chiefly the sweet-smelling, with a smaller and more compressed root, having a deep blue colour, but varying to a sky-blue;—the mountain, which has a flower of a pale blue colour;—the many-flowering blueviolet, with numerous sky-blue flowers; and the smallflowering, having a small deep blue flower.

The second kind has a pretty large compressed bulb, covered by a light brown netted skin, from which proceed four or five leaves of a purple colour on their lower parts, from among which issue one or two flowers, fitting close between the young leaves, and never rising above two inches in height, but having an agreeable odour. From the centre of the tube a slender style proceeds, which is crowned by a broad flat stigma of a golden colour. When the flower is past, the germ pushes out of the ground. The flower in the wild state is yellowish white, with a purple base.

And of this kind, the varieties are; the broad-leaved purple variegated, which has a flower of a deep blue colour and striped;—the broad-leaved plain purple;—the broad-leaved violet-coloured, or large deep blue;—the white with a purple bottom;—the broad-leaved white variegated;—the broad-leaved, with many violet purple flowers, striped with white;—the broad-leaved ash-coloured;—the broad-leaved large yellow;—the broad-leaved small pale yellow;—the broad-leaved small yellow striped with black;—the narrow-leaved small brimstone;—and the narrow-leaved small white. But in modern catalogues, there are many other varieties of different colours introduced, as blue and purple, yellow and white, or striped. New ones are also continually imported from Holland. The usual varieties at present in gardens are;—the beautifully striped Scotch;—the blue;—the blue striped;—the white;—the yellow of several shades, larger and smaller;—the yellow striped with black;—the cloth of gold, &c.

Method of Culture.—The culture in both these sorts, and all the varieties, is easily effected, by planting the bulbs or off-sets taken from the roots; the first sort in July, or the beginning of the following month; and the latter any time when the weather is open, from September to the beginning of April in the following year; but the more early it is performed, the stronger they flower; it may be performed by means of a dibble or trowel, to the depth of about two inches, the ground being previously well dug over, and left some time to settle. They may be set either in beds by themselves in rows, at the distance of eight or nine inches, and six or eight inches apart, or in patches of five or six roots each, on the fronts of the clumps, borders, or other parts of gardens and pleasure-grounds, putting them in, in a varied manner, both in respect to the sorts, and the order in which they are planted.

Where the soils are tolerably dry, they may remain two or three years without being disturbed; but should then be taken up at the time the leaves decay, in order to separate the new bulbs or off-sets for further increase, as well as new dig the ground. The larger bulbs should be separated from the small ones, and put up, each by themselves, in order to be planted out at the proper season; the former in the above manner, and the latter in beds, in rows six inches distant, to remain till they are of a proper size. See Bulbous Roots.

As the bulbs increase fast, a large flock may, with care, soon be provided in this way. But when this is not practised, bulbs of the different species and varieties may easily be procured from the nursery and seeds-men.

It may be observed, that in the culture of these plants, great injury is frequently done by trimming off the green leaves at the time the flowers decline, in order to prevent litter; as by such means the future blow is rendered more weak and less beautiful.

Where new varieties are wanted recourse must be had to the seed, which must be sown in the spring season, either when the plants are to remain, or in pots filled with the same sort of earth. The first little specimens of the plant, which is cultivated in fields, and from the stigma of which the preparation known, under the title of English saffron, is made.

Crocus, or Saffron, in the Materia Medica. The substance called saffron, is sold in the hops in the form of thin tough cakes, formed of the pistils of the flower, which are carefully picked by hand, pressed together, and gently dried in kilns. No other preparation whatever is employed.

Saffron used to be cultivated pretty largely in England, and the neighbourhood of Saffron-Walden, in Essex, was celebrated for this substance, which was employed very largely in cookery and confectionary as well as in medicine; but, at present, it is scarcely used for the table, and but little as an article of the Materia Medica. In various parts of the continent it is still largely employed.

Saffron has a high orange red colour, readily staining the fingers when a little moist. The cakes should not be above a year old, clove and tough in texture, neither so dry as to be pulverizable, nor so moist as to feel sensibly damp. The smell is very strong, fragrant, and penetrating, and the taste aromatic and bitter, but both are much injured by long or careless keeping. The fine yellow colour is readily imparted to almost any menstruum, to water, vinegar, alcohol, &c. and the intensity of tingling power is very great.
four, however, is completely fugitive on exposure to air for some time, and is not permanently detained on cloth of any kind by any of the usual mordants, so that as a dye it is nearly useless, except to give a pale and superficial finishing gloss to yellow or orange stuffs. Both the water- and acetous infusions lose most of their colour by keeping, but the spirituous tincture preserves its rich hue for a great length of time.

Saffron was formerly reckoned one of the most valuable and potent cordials which the Materia Medica professed, rousing the strength, spirits, and animal powers in a very high degree, when given in doses of no more than a few grains. These virtues, however, have been excessively exaggerated, nor does this medicine appear to have higher powers than many other of the aromatic bitters. This circumstance, added to the great and necessary collect of a substance which requires so much manual employment in its preparation, has caused saffron to fall nearly into disuse, though it is still retained in a few of the compounds of the pharmacopoeia. A syrup and tincture of saffron are often employed as grateful and elegant medicines.

Saffron yields, by distillation, a very pungent effential oil, and the residue is a bitter ungrateful extract.

Crocus of Antimoy, is a perfect oxaty of this metal, formed by deagratling with nitre, and is called a crocus from its yellow colour. See Antimony.

Crocus Maris. Several oxeters of iron have had this name given to them. Stahl's acetous crocus of Mars is formed by deagratling with nitre the foverse of the martial regulus of antimony, which confits of fulphuret of iron retaining a small portion of antimony; and hence the crocus, or washed orange-powder, left after deagratling, confits of oxet of iron mixed with a minute portion of oxaty of antimony. It is now disused.

The common crocus maris, or colorbar, is the deep orange red oxet of iron left by calcination of the sulphat of iron, in a best strong enough to expel all its acid.

Crocuta, in Zoology, the quumerbego of Barbout, (Guin. p. 486), and spotted hyena of Pennant, is a species of Canis, with a straight tail, four toes on the feet, and the body spotted with black. It inhabits Guinea, Ethiopia, Abyssinia, the Cape of Good Hope, and all the intermediate countries of Africa; living in holes of the ground and clfts, of rocks. It preys by night on cattle, sheep, and horses, attacks men, and digs up graves to feed on dead bodies. It has a dreadful howling voice. The upper parts of the head and face are black; the mane short and black; the body and limbs covered with short soft hair, of a reddish-brown colour, marked with round black spots; the tail short and curly. This species is of such fire, strength, and ferocity, that it can carry off, with great speed, a full-grown man. The head is large and flat, having long hair above each eye, and very large whiskers on each side of the nose.

Crocylea, in Ancient Geography, a town and distirct which belonged, as some have supposed, to the island of Ithaca, but which really pertained to Ethioa.

Croeker, John, in Biography, an artist, who was employed in England under queen Anne, and its two succeeding monarchs, to execute many medals upon public occasions. Amongst his works we may enumerate the following: A medal in commemoration of the Union of England and Scotland in 1707; Another medal, representing George II, and his family. A print of his own portrait, engraved by his own hand. Heinicken.

Croesus, the fifth and last king of Lydia. He succeeded his father at about the age of thirty-five, which is dated B. C. 577. Almost immediately after he ascended the throne, he gave himself up to plans of war and ambition, and by his great successes over the Grecian states and the kingdoms of Asia Minor, which he not only subdued but plundered, he became the richest and most powerful prince of his time. Wealth and power are, however, no security for happiness; in the midst of his glory, and when he had attained nearly the summit of his expectations, he lost his son Atys, who was killed in hunting. To wear off, if possible, the uneasiness which this misfortune excited in his mind, he determined to make war upon Cyrus; but before he engaged in so important an enterprise, in compliance with the customs of the age, he modestly consulted the most celebrated oracles. From that of Delphos, he obtained an answer, like others of the fame kind, which admitted of two interpretations: "If Croesus crosses the Haly, he will put an end to a great empire." Croesus, depending on his own good fortune, expected from this to destroy the Persian monarchy, but Cyrus, its king, was declared for more important purposes. (See Cyrus.) He obtained a complete victory over the Lydian monarch, and Croesus was made prisoner, and would, probably, have lost his life, but from the extraordinary circumstance of his own son, who till then had been perfectly dumb, but who, on seeing a soldier about to kill his father, exclaimed, as if it were by divine inspiration, "Soldier, spare the King." We are told that the young man from this time had the use of his tongue. The fortune of Croesus, after this event, was various, and he had full leisure to reflect on the folly of trufting to wealth. In his prosperity, the "wealth of Croesus" was proverbial, and the king once invited Solon the wise to witness a display of his riches, hoping that the philosopher would deem him, as he concluded himself to be, the most fortunate man living; but Solon, to various interrogatories, replied, that "he deemed no man happy before his death." The prince was disconcerted, and dismissed the philosopher from his presence. When fortune had turned the scale, and he was about to be put to death at the command of Cyrus the conqueror, he recollected the saying of Solon, and thrice loudly called upon his name. Cyrus inquired into the caufe, and when he had heard the relation, he pardoned the fallen monarch, took him into his favour, and made him his companion and counsellor in his several expeditions. Croesus favored his friend, who, in his last moments, recommended him to the particular care of his son Cambyses, as one in whom he might place the most unlimited confidence. Cambyses, however, treated him ill, and condemned him to death; from this cruel sentence he escaped, and history furnishes us with no clue whence his subsequent fortunes can be traced. Univer. Hist. Pinckney's Life of Solon.

Croever Reich, or Cadaver Reit, in Geography, a small district of Germany, in the circle of the Upper Rhine, on the N. side of the Moselle, from the count of Sponheim, in 1274, to the archbishop of Treves.

Croft, in Agriculture, is a name often applied to the more northern districts to a small field or inclosure, mostly that in which the cottage, or house and garden are situated. It is, however, sometimes employed to signify a common field in particular districts. "Pollent etiam dicti monachi de eodem maricis verius occidentem jaceuntibus pro fo, & hemorrhibus suis, includere crofis, five pratum iusta potenti, speculitius, quantum ilius praeclare." Ingulf. In some ancient deeds, crofts occurs as the Latin word for a croft; but cum toatis & crofis is more frequent. Croft is translated in Abbot Floriacensis, by practinum, a farm.

Croft, Herbert, in Biography, a prelate of the church of England, who flourished in the 17th century, was third...
son of Sir Herbert Croft, and born in 1603, at Great Milton, Oxfordshire. In 1616, he was entered, it is believed, at Christ College, Oxford, from whence, on account of his father’s conversion to the tenets of popery, he was sent to the English college of Jésuits at St. Omer, and entered into the order. Upon the death of his father, he had occasion to visit his native country, and was, by means of Dr. Morton, bishop of Durham, brought back to the religion in which he was originally educated. He went a second time to Oxford, and the time which he had spent at Douay was allowed to him, as if he had continued wholly at the English university. This was in 1655, when he went through the appointed exercises with applause, and in the following year was admitted to the degree of bachelor of divinity. He now rose rapidly in the church, and in 1641, was promoted to a canonry of Windsor. Three years after this he was appointed dean of Hereford, in which city he chiefly resided, until his zeal for royalty, and his attachment to the interests of the church, rendered him obnoxious to the existing government. His exertions in these services, which were attended with hazard, occasioned him to expend much of his own small fortune, as well the little which he derived from his prebends. His circumstances became embarrased; but in 1659 he succeeded to the family estate, and was delivered from the prelude of want; he thought it prudent, however, to live in the most retired manner at a friend’s house in Worceftershire, till the restoration, when he was re-inflated in his several preferments, and in the year 1661 he was appointed dean of Hereford. From this time, he refused offers of more valuable bishoprics; and being disgusted with the profligate manners and intolerant practices of the court, he confined himself to the conscientious discharge of his duties as a bishop, which he performed with honour to his own character, and for the benefit of the church of which he was a member. Though zealously attached to his own opinions, he was the determined enemy of all persecution, wrote in defence of toleration, to be extended to dissenters, and pleaded the cause of humanity and Christian forbearance, with a zeal and moralis that reflect high honour on his principles, and the excellence of his temper. This work, which was intitled “Naked Truth; or the true State of the Church,” excited much controversy. The bishop, shortly after, had formed a determination to quit his office and resign the bishopric, but was prevailed on to abandon the resolution, and to continue his episcopal labours till his death, which happened in 1661. He was author of several other pieces, among which were “Animadversions on a Book intituled the Theory of the Earth;” “The Legacy, &c. or a Short Determination of all Controversies which we have with Papists, by God’s Holy Word;” and “A Discourse concerning the reading his Majesty’s Declaration in Churches.” The learned prelate deserves higher applause as a man and a Christian than as a writer, though his pieces were respectable, considering the times in which he lived; but in his clerical character he was an admirable pattern, both with regard to the faculty and amiable-fs of his manners, and the diligence with which he instructed his people, and visited the aged and the sick. His memory, however, claims particular respect on account of the moderation and candour which he exhibited towards those whose confinences would not permit them to conform to the established church, and his avowed abhorrence of every measure of the legislature which wore the least appearance of persecution. Biog. Brit.

CROFTING System, in Agriculture, is that practice of grazing-tarning in which the burdens is conducted in small inclosures at no great distance from the farmer's house.

It has been lately recommended by Mr. Brown as an advantageous method to be adopted in some of the highland districts of Scotland; and might, probably, be pursued with benefit and success in particular situations in Wales.

CROFTON, Zachary, in Biography, a non-conformist preacher in the 7th century, was born at Dublin, where he received the principal part of his education. During the civil wars he came to England, but to delitiate, that he is said to have arrived at Chester with only four-pence in his pocket. He soon after obtained the living of Wrextonbury in Cheshire; here, on account of his attachment to the cause of royalty, for refusing to subscribe "The Engagement," an instrument of the existing government, and exciting others to do the same, he was perfected. He thought it right to seek a new course of life in the metropolis. Soon after the restoration, he engaged in a controversy respecting the obligation of the "solemn league and covenant," for which he pleaded so much zeal and freedom, that he provoked the indignation of the court, and was committed prisoner to the Tower, where he was detained, to the detriment of his fortune, which was very lanty, and to the injury of his family, which was numerous. He, at length, was liberated, and retired into Cheshire, where he was again imprisoned; but on his release, he first endeavoured to maintain his family by going into trade, and afterwards by becoming a farmer in the county of Bedford. In 1667, he came again to London, and opened a school at Aldgate, where he died, in 1672. He was author of many tracts on controversial subjects, and of sermons. Calamy’s Ejected Ministers.

CROJA, in Geography, a town of European Turkey, in the province of Albania; anciently the capital and residence of the Albanian kings. The famous Scanderbeg used this place as a fortres, from whence he continually harrelled the Turks; but when the Turks became masters of Albania, they destroyed the fortifications. It is the see of a bishop, suffragan of the archbishop of Durazzo; 20 miles N.E. of Durazzo.

CROEDIT, and Cerretto the Younger; for a parallel between the two admirable performers, i.e. Violoncello.

CROISEDE, Crusade, or Crusado, a holy war, or an expedition against infidels and heretics; particularly against the Turks, for the recovery of Paleline. This expedition was distinguished, in the French language, by the name of a croisade, and all who embarked in it were called croisés, because the end of this holy war was to arrest the crofs of Christ out of the hands of the infidels, and also on account of the confiscated croises of various colours, which the soldiers wore upon the right shoulder. They were ordered, as it is said, by the council of Clermont. The English wore them white; the French, red; the Flem, green; the Germans, black; and the Italians, yellow.

People anciently flocked on these croises out of devotion; the pope's bulls, and the preaching of the priests of these days, making it appear a point of conscience. Hence several orders of knighthood took their rise.

Many circumstances contributed to give rise to these expeditions. The defire of visiting a country which had been the scene of very important transactions, and in which the Son of God had accomplished the redemption of mankind, together with the idea of peculiar merit, acquired by a particular pilgrimage of this kind, and of its serving as a general expiation for almost every crime, had no small influence on this occasion. Besides, an opinion prevailed,
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vailed, about the close of the 10th and beginning of the 11th century, that the thousand years mentioned by St. John, (Rev. xx. 2, 3, 4.) were accomplished, and that the end of the world approached; many thus hurried into the Holy Land, where they imagined that Chriil would quickly appear to judge the world. Christians also thought it reproofful to suffer a country, which had been so ignobly distinguished, and whence they derived the most valuable benefits, to be abandoned to the enemies of the Christian name; and they thought it meritorious to avenge the calamities and injuries which its professors had suffered under the Mahometan yoke. Moreover, pilgrims were encouraged in their resort to Jerusalem, whilst Palestine continued subject to the caliphs; but when the Turks conquered Syria, about the middle of the eleventh century, they were exposed to every kind of outrage from these barbarians, and returned with exaggerated accounts of the dangers they had encountered in visiting the Holy City, and the cruelties and vexations they had endured. Accordingly, the first signal was given by Silvester II. towards the close of the tenth century, in an epistle wrote in the name of the church of Jerufalem to the church universal throughout the world, in which all the European powers are in treated and exhortd to succour and relieve the Christians in Palestine. This effort of zeal, however, produced no immediate effect. Gregory VII., in the beginning of the 11th century, revived an attention to this undertaking, proposed in person to invade the Holy Land, and upwards of 50,000 men were already murdered to follow him in this bold expedition. Although he was prevented by his quarrel with the emperor Henry IV. from executing this design, the spirit of the people was inflamed; and Peter the Hermit, returning from a voyage which he had made through Palestine, A.D. 1092, complained of the extreme sufferings of the Christians, applied to Urban II. for succour, and ran from province to province with a crusade in his hand, exciting princes and people to this holy war, and pretending a divine commission for this purpose. At length, Urban II. finding a general ardour for the cause, assembled a grand and numerous council at Placentia, A.D. 1095, and warmly recommended this expedition. Soon after, in the same year, the proposal was renewed with succours at the council of Clermont; at which were present, besides the papal court and council of Roman cardinals, 13 archbishops, 225 bishops, 400 mitred prelates, a great number, some 5000, of ecclesiastics, and three hundred thousand laymen. In the market place of Clermont, the pope (Urban II.) ascended a lofty scaffold and addressed his eloquence to a well-prepared and inpatient audience. Such was the succours with which he addressed a numerous multitude, that he was interrupted by the clamorous shouts of thousands who with one voice exclaimed, "Deus vult; D. us vult!" "God wills it; God wills it!" "It is indeed the will of God," replied the pope; "and let this memorable word, the inspiration purely of the Holy Spirit, be ever adopted as your cry of battle; to animate the devotion and courage of the champions of Christ. His cross is the symbol of your salvation; wear it; a red, a bloody cross, as an external mark on your breasts or shoulders, as a pledge of your fierce and irreconcilable engagement." The proposal was joyfully accepted; and if we may believe the concurrent testimony of contemporary authors, fix millions of persons adhered to the distinguishing badge of those who devoted themselves to this holy warfare. The fumes of this enthusiastic zeal did not evaporate at once; the frenzy was as lasting as it was extravagant. During two centuries Europe seems to have had no object but to recover or keep possession of the Holy Land, and through that period vast armies combined to march thither.

The number need not astonish us, if we consider that it was a motley assemblage of monks, profiteers, artists, labourers, lazy tradesmen, merchants, boys, girls, slaves, mal- leactors, and profigate debauchees; and that it was principally composed of the lower degrees of the multitude, who were animated solely by the prospect of spoil and plunder, and hoped to make their fortunes by this holy campaign.

Besides, we shall have no reason to wonder at the multitude who flocked to the standard of the cross, if we advert to the natural operation of that zeal and the numberless priviledges which the Crusaders acquired. Many or perhaps the greatest number of the chiefs and soldiers we may naturally suppose were prompted by the spirit of enthusiasm; the belief of merit, the hope of reward, and the assurance of divine aid. But it is equally certain that with many this was not the sole, and that with some it was not the leading, principle of action. In the council of Clermont, pope Urban had proclaimed a plenary indulgence to those who should enlist under the banner of the cross; the absolution of all their sins, and a full receipt for all that might be due of canonical penance. Moreover, the extensive privileges and immunities, granted to those who assumed the cross, would serve to account for the first ardour and long continuance of the Crusading spirit in Europe.

The Crusaders were exempted from prosecutions on account of debt, during the time of their being engaged in this holy service. They were exempted from paying interest for the money which they had borrowed. They were exempted either entirely, or at least during a certain time from the payment of taxes. They might alienate their lands without the consent of the superior lord of whom they held. Their persons and effects were taken under the protection of St. Peter, and the anathemas of the church were denounced against all who should molest them, or carry on any quarrel or hostility against them, during their absence, on account of the holy war. They enjoyed all the privileges of ecclesiastics, and were not bound to plead in any civil court, but were declared subject to the spiritual jurisdiction alone. And as we have already observed, they were promised a plenary remission of all their sins, and the gates of heaven were set open to them, without requiring any proof of their penitence by their engaging in this expedition, and thus gratifying their favourite passion, the love of war. (Du Cange.) Besides, the civil and ecclesiastical powers vied with one another, and stimulated their invention to devise expedients for encouraging and strengthening the spirit of superstition, and in setting a mark of cowardice and infamy on those who declined engaging in the holy war. In a letter addressed from Stephen, the earl of Chartres and Blois, to Adela his wife, in which he gives an account of the progress of the crusaders, he describes them as the chosen army of Christ; as the fervants and soldiers of God; as men who marched under the immediate protection of the Almighty, being conducted by his hand to victory and glory. He speaks of the Turks, on the other hand, as accursed, sacrilegious, and devoted by heaven to destruction; and when he mentions the soldiers in the Christian army who had died or were killed, he is confident that their souls were admitted directly into the joys of paradise. Actuated and animated by such views, the crusaders embarked in this frantastic expedition with singular ardour, and submitted without reluctance to the inconvenience and enormous expense that attended it. That the expense of con-

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duing numerous bodies of men from Europe to Asia must have been excessive, and that the difficulty of raising the necessary funds for the crusade must have been proportionally great. We may infer from the expeditions to which the leaders of this expedition were obliged to recur, during ages when the public revenues in every nation of Europe were extremely small. Hubert II. dauphin of Vienne, was obliged to furnish himself with money towards defraying the expense of the crusade, A.D. 1246, by very extraordinary finesse and concessions. He exposed to sale part of his domains; and the French king, in this forced service, gave his consent and ratified the alienation. Moreover, he issued a proclamation, in which he promised to grant new privileges to the nobles, as well as new immunities to the cities and towns, in his territories, for certain sums which they were in fact to pay on that account; and, in this manner, many charters of community were obtained. He exacted also a contribution towards defraying the expenses of the crusade from all his subjects, both ecclesiastics and laymen, who did not perforce accompany him to the East. He appropriated a considerable part of his usual revenues for the support of the troops to be employed in this service: and he exacted considerable sums, not only of the Jews settled in his dominions, but also of the Lombards and other barons who had fixed their residence there. Notwithstanding all these exactions, he was involved in difficulties, which, on his return, required fresh exactions and demands. When the count de Foix engaged in the first crusade, he raised the money necessary for that expedition, by alienating part of his territories. In like manner, Baldwin, count of Hainaut, mortgaged or sold part of his domains, to the bishop of Liege, A.D. 1297. And, at a later period, A.D. 1359, Baldwin, count of Namur, sold part of his dominions to a monastery, when he intended to assume the cross.

Early in the spring of the year 1095, above 50,000 of the populace of both sexes from the confines of France and Lorraine assembled and put themselves under the conduct of Peter the Hermit, and followed him along the banks of the Rhine and Danube. The example and footsteps of Peter were closely pursued by another fanatic, the monk Godofec, whose sermons had swept away 15 or 20 thousand peafants from the villages of Germany. Their rear was again prefed by an herd of 200,000, the most stupid and savage refuse of the people, who mingled with their devotion a brutal licence of rapine, prostitution, and drunkenness. Some counts and gentlemen joined the motley multitude with a view of sharing in the spoil. The first attacks of these enflaved were directed against the Jews, who were numerous and rich in the trading cities of the Moselle and Rhine, and who enjoyed, under the protection of the emperor and the bishops, the free exercise of their religion. At Verden, Treves, Mentz, Spire, and Worms, many thousands of these unhappy people were pillaged and massacred. As these crusaders advanced to the wild and desolate countries of Hungary and Bulgaria, and traversed an interval of 600 miles, they endured incredible hardships. About a third of the naked fugitives, and among them the hermit Peter, escaped from the attacks of the Hungarians to the Thracian mountains; and the emperor, who respected the pilgrimage and sacerdoc of the Latins, conducted them by secure and easy journeys to Constantinople, advising them to await the arrival of their brethren. Here, however, regarded as the kindred of their benefactor, neither gardens, nor palaces, nor churches, were safe from their rapacities. Alexius, therefore, for his own security, assured them to pass over to the Asiatic side of the Bosphorus; but their blind impetuosity urged them to rush precipitately against the Turks, who occupied the road of Jerusalem. Soliman, by spreading a rumour that some of their companions were rioting on the spoils of his capital, tempted the main body to defend into the plain of Nice, where they were overwhelmed by the Turkish arrows; and where a pyramid of bones informed their companions of the place of their defeat. Of the fifth crusaders 300,000 had already perished, before a single city was rescued from the infidels, and before their graver and more noble brethren had completed the preparations of their enterprise. None of the great sovereigns of Europe embarked their persons in the first crusade; but the religious ardour more strongly operated on the princes of the second order, who held an important place in the feudal system. The first rank both in war and council is justly due to Godfrey of Bouillon, a descendant of Charlemagne in the female line. He was accompanied by his two brothers, Euflate, the elder, and Baldwin, the younger; the duke of Lorraine, and the barons of France, Germany, and Lorraine, who assembled their vaillons. The confederate force that marched under the banner of Godfrey was composed of 80,000 foot, and about 10,000 horse. Among the heads of the early crusaders we may also mention Hugh of Vermandois, Robert duke of Normandy, the eldest son of William the Conqueror, Robert count of Flanders, St. Louis, Jean de France, and Stephen, count of Chartres, Blois and Troyes, one of the richest princes of the age; the number of whole castles is said to have amounted to the 35 of days of the year. These were the principal leaders of the French, the Normans, and the pilgrims of the British Isles; but the list of the barons, who were composed of 30 or 40 towns, would exceed, says a contemporary, the catalogue of the Trojan war. Raymond of Toulouse, and Aschemar, bishop of Pay, andlegate of the pope, assumed the command in the south of France; and the united force consisted of 100,000 horse and foot. Bohemond, the son of Robert Guiscard, at the head of 10,000 horse, and 20,000 foot, was accompanied by several princes of the Roman race, and also by his cousin Tancrede.

The difficulty of procuring sufficiency for such an incalculable multitude of men and horses, induced these several leaders to separe their forces; and they agreed to meet at lat in the neighbourhood of Constantinople, and thence to begin their military operations against the Turks. Godfrey of Bouillon, departing from the banks of the Meuse and Moselle, pursued the direct way of Germany, Hungary, and Bulgaria. From Austria to Belgrade, they traverfed the plains of Hungary without enduring or offering any injury; with the same conduct and discipline, he pervaded the woods of Bulgaria and the frontiers of Thrace; and he almost reached the frist term of his pilgrimage, without drawing his sword against a Christian adversary. After an easy and pleasant journey through Lombardy, from Turin to Aquileia, Raymond and his provincials marched 40 days through the savage country of Dalmatia and Servia; and his march between Durazzo and Constantinople was somewhat harassed, without being stopped, by the peafants and foldiers of the Greek emperor. Fr. in the Alps to Apulia, the march of Hugh the Great, of the two Roberts, and of Stephen of Chartres, through a wealthy country, and amidst the applauding catholics, was a devout and triumphant progress; they killed the feast of the Roman pontiff; and the golden Standard of St. Peter was delivered to the brother of the French monarch. All separately accomplished their passage, regardlss of safety or dignity, and within 9 months from the feast of the Assumption, August the 15th, 1096, the day appointed by Urban II, all the Latin princes had reached Constantinople.
CROISADE.

The principal force of the crusaders consisted in their cavalry; and when that force was massed in the plains of Bithynia, the knights and their martial attendants on horseback amounted to 200,000 fighting men, completely armed with the helmet and coat of mail. The whole number, that formed the infantry and promiscuous crowd, was composed of 500,000 pilgrims, able to bear arms, and priests, monks, women, and children. It is farther said, that if all who took the cross had accomplished their vow, above six millions would have emigrated from Europe to Asia. Of these religious volunteers, great numbers never beheld Constantinople and Nice. Some declined the enterprise in consequence of the transitory duration of their enthusiasm; others passed by cowardice, and others again on account of their poverty or weakness. Many fell in the savage countries of Hungary and Bulgaria; their vanguard was cut in pieces by the Turkish sultan; and we have fluted the loss of the first adventure by the sword, or climate, or fatigue, at 300,000 men.

The first efforts of these adventurers were irremediable, and they gained considerable advantages. From their first intiation in Nicomedia, they advanced, from May 14th, to June 20, A.D. 1097, in successive divisions; passed the contracted limit of the Greek empire; opened a road through the hills; and commenced their pious warfare against Soliman, the Turkish sultan, by the siege and capture of Nice, his capital. Soliman, provoked rather than dismayed by the loss of his capital, collected his Turkman horse, constituting a force which was flasted by the Christians at 200,000, or even 500,000, thousand horse. A severe engagement took place at Dorylæum, in Pasadena, July 4th, A.D. 1097, which terminated in victory on the part of the crusaders, and the timely retreat of the sultan, who evacuated the kingdom of Roum. In a march of 500 miles, from July to September, the crusaders traversed the Leifer Aflis, through a fertile land, and defeated towns, without finding either a friend or an enemy, encountering in every step of their progress a great variety of difficulties and hardships. A detachment from the main army over-ran in a rapid career the hills and sea-coast of Cilicia, from Cogni to the Syrian gates; the Norman Randomo was first planted on the walls of Tarsus and Melimira; and after a private conflict between Baldwin and Tancred, the former took possession of Elecla, and founded the first principality of the Franks or Latins, which subsisted 54 years beyond the Expiration. During the ensuing winter the siege of Antioch, the capital of Syria, was commenced, and after an attack and defence equally obstinate, the city was surprized in the night; the army rushed in through the gates; and the Mollemes soon found that resistance would be inexpedient and unavailing. The citadel still refused to surrender; and the victors were encompassed and besieged by the innumerable forces of Kerboga, prince of Mosul. In this extremity they collected the relics of their strength, failed from the town, and in a single memorable day (June 28th, A.D. 1098), annihilated or disperst the host of Turks and Arabians, consisting of 600,000 men. The attack of Jerusalem was supplemented above ten months after the defeat of Kerboga; for the crusaders, after the victory they had obtained, hastily dispersed to enjoy the luxury of Syria. By the siege of Antioch, and subsequent battles, as well as by famine and sickness, their numbers had been greatly diminished, and their strength enfeebled; however, in the month of May, A.D. 1099, the relics of their mighty host proceeded from Antioch to Laodicea; about 40,000 Latin, of whom no more than 1,500 horse, and 20,000 foot, were capable of immediate service. Their early march was continued between mount Jihannas and the sea-shore; their wants were liberally supplied by the coasting traders of Genoa and Pisa; and they drew large contributions from the cities of Tripoli, Tyre, Sidon, Acre, and Cæsarea, which granted a free passage, and promised to follow the example of Jerusalem. From Cæsarea they advanced into the midland country, recognizing in their progrest Lydda, Ramila, Emmaus, and Bethel; and as soon as they defied the Holy City, the crusaders forgot their toils, and claimed their reward. The garrison is said to have consisted of 40,000 Turks and Arabs, under the command of Aladin or Ititkhur, the lieutenant of the caliph, with whom the defence of the city was entrusted. The siege commenced on the 7th of June, A.D. 1099, and was directed against the northern and western sides of the city. Godfrey of Bouillon erected his standard on the first swell of mount Calvary; to the left, as far as St. Stephen's gate, the line of attack was continued by Tancred, and the two Roberts; and count Raymond established his quarters from the citadel to the foot of mount Sion, which was no longer included within the precincts of the city. On the 5th day, the crusaders made a general assault, with the fanatical hope of battering down the walls without engines, and of scaling them without ladders. By dint of brutal force, they burst the first barrier; but they were driven back with flame and slaughter to the camp. The siege was prolonged for 40 days; and they were 40 days of calamity and anguish, during which they endured distaff ing pioneers of food and water. Having constructed two turrets, they were rolled to the most accessible, and most neglected, parts of the fortification. One of them was unfortunately reduced to ashes by the fire of the besieged; but by means of the other, the enemies were driven by archers from the rampart; the drawbridge was let down; and on Friday at three in the afternoon, the day and hour, as it is said, of the passion, Godfrey of Bouillon bold victors on the walls of Jerusalem. His example was followed on every side by the emulation of valour; and about 460 years after the conquest of Omar, the Holy City was rescued from the Mahometan yoke. The victors, to their everlasting disgrace, indulged themselves three days in a promiscuous massacre; thus the infection of the dead bodies occasioned an epidemic disease. After 70,000 Mollemes had been put to the sword, and the harams Jews had been burned in their synagogues, they revered a multitude of captives; and Raymond granted a capitulation and safe-conduct to the Saracen of the crusade.

"The holy Sepulchre was now free; and the bloody victors prepared to accomplish their vow. Bare-headed and bare-foot, with coarse garments, and in an humble posture, they ascended the hill of Calvary, amidst the loud anthems of the clergy; kissed the stone which had covered the Saviour of the world; and bedewed, with tears of joy and piety, the monument of their redemption."

Eight days after this memorable event (July 23, A.D. 1099), the Latin chiefs proceeded to the election of a king, to guard and govern their conquests in Palestine; when the free, just, and unanimous voice of the army proclaimed Godfrey of Bouillon the first and most worthy of the champions of Christendom. His magnanimity accepted a truce as full of danger as of glory; but in a city where his Saviour had been crowned with thorns, the devout pilgrim rejected the name and enigma of royalty; and the founder of the kingdom of Jerusalem contented himself with the modest title of Defender and Baron of the Holy Sepulchre." Within a fortnight after his acceptance of this honour, he was called to the field of battle by the approach of the vizir or sultan of Egypt, who was totally vanquished in the battle of Ascalon.
Acre, Aug. 12, A.D. 1199. This victory sealed the establishment of the Latins in Syria, and legalized the vassals of the French princes, who in this action bade a long farewell to the holy wars. Godfrey could retain, after this battle, only with the gallant Tancred 300 knights, and 2500 foot soldiers, for the defence of Palestine. Soon after this, a new enemy attacked his sovereignty, who sprung out of the bosom of the church. The lewdish clamours of the ecclesiastics were urgent for the choice of a bishop, which, in their opinion, should have preceded that of a king. At this time Daimbert, archbishop of Pisa, feasonably arrived, with a fleet of his countrymen, for the service of the Holy Land; and he was immediately installed, without a competitor, the spiritual and temporal head of the church. The new patriarch instantly grasped the sceptre which had been acquired by the toil and blood of the victorious pilgrims; and both Godfrey, and Bohemond, who had claimed the sovereignty of Antioch as the recompense of his services during its siege, and in obtaining its surrender, submitted to receive of the hands of Daimbert the investiture of their feudal possessions. Daimbert further claimed the immediate property of Jerusalem and Jaffa; and a quarter of every city that was ceded to the church; and the modest bishop was satisfied with an eventual renunciation of the right, on the death of Godfrey without children, or on the future acquisition of a new seat at Cairo or Damasceus. This infant kingdom consisted only of Jerusalem and Jaffa, with about 20 villages and towns of the adjacent country. By the arms of Godfrey himself, and of the two Baldwins, his brother and cousin, who succeeded to the throne, the boundaries of this kingdom were enlarged. After the reduction of the maritime cities of Lanodieus, Tripoli, Tyre, and Acre, the range of coast from Scanderbon to the borders of Egypt, was possessed by the Christia,n pilgrims. The counts of Edessa and Tripoli owned themselves the vassals of the king of Jerusalem. The Latins reigned beyond the Euphrates; and the four cities of Hems, Hamah, Damascus, and Aleppo, were the only relics of the Mahometan conquests in Syria. The new government was framed, and the laws and language, the manners and titles, of the French nation, and Latin church, were introduced into these transmarine colonies. However, the fierce bulwark of Jerusalem was founded on the strength of the spirit of St. John, and of the temple of Solomon. These knights maintained their ferocity and fanatic character; and the spirit of chivalry, which was both the parent and offspring of the crusades, was transplanted by this institution from the holy sepulchre to the isle of Malta. As soon as Godfrey of Bouillon was seated in the office of supreme magistrate, he solicited the advice of the Latin pilgrims, who were well skilled in the statutes and customs of Europe, and from the materials which they furnished, with the counsel and approbation of the patriarch and barons, of the clergy and laity, Godfrey composed the "Affile of Jerusalem," which is a precious monument of feudal jurisprudence. The final revision of this code was accomplished in the year 1259, for the use of the Latin kingdom of Cyprus. The justice and freedom of the constitution were maintained by two tribunals of unequal dignity, infiltuated by Godfrey of Bouillon, after the conquest of Jerusalem. The king preluded in perforin in the upper court, the court of the barons; the nobles, who held their lands immediately of the crown, were entitled and bound to attend the king's court; and each baron exercised a similar jurisdiction in the subordinate assemblies of his own feudataries. The connection of lord and vassal was voluntary and honourable. The cognizance of marriage and entailments was blended with religion, and usurped by the clergy; but the civil and criminal causes of the nobles, the inheritance and tenure of their fees, formed the proper occupation of the supreme court. Each member was the judge and guardian of both public and private rights. The Affile of Jerusalem admits, in many cases, the barbarous institution of judicial combat. The trial by battle was established in all criminal cases, which affected the life, or limb, or honour, of any person; and in all civil transacdon, of or above the value of one mark of silver. Champions were only allowed to women, and to men maimed, or past the age of 60. In the Affile of Jerusalem it is expressly declared, that after inzisting, for his knights and barons, the court of peers, in which he preferred himself, Godfrey established a second tribunal, in which his person was represented by his vicount. This court extended its jurisdiction over the bargesses of the kingdom; and it was composed of a select number of the most discreet and worthy citizens, who were sworn to judge, according to the laws, of the actions and fortunes of their equals. In the conquest and settlement of new cities, the example of Jerusalem was imitated by the kings and their great vassals; and above 30 similar corporations were founded before the loss of the Holy Land. These cities and corporations, if those of Paleline were cœval with the first crusade, may be ranked with the most ancient of the Latin world. (See City and Charters of Community.) A third court was established for the use of the great Syrians and Oriental Christians who were oppressed by the zeal of the clergy, and who wished to be judged by their own national laws. Its jurisdiction was limited and domestic; its sworn members were Syrians, in blood, language, and religion; but the office of the president was sometimes exercised by the vicount of the city. At an unmeasurable distance below the nobles, the burghers, and the strangers, the Affile of Jerusalem confided to mention the villeins and slaves, the peasanls of the land, and the captives of war. The relief or protection of these unhappy men was not esteemed worthy of the care of the legislator; but he diligently provides for the recovery, though not indeed for the punishment, of the fugitives.

In the 12th century, there were consideroble bodies of emigrants who marched by land from the West to the relief of Palestine. The monks and pilgrims of Lombardy, France, and Germany, were excited by the example and success of the first crusade. Forty-eight years after the deliverance of the holy sepulchre, the emperor Conrad III. and the French king, Louis VII., undertook the second crusade to support the falling fortunes of the Latins. This expedition was undertaken at the instigation of Bernard, abbot of Clairval, and under the pontificate of Eugenius III. A.D. 1147. Conrad and Louis met at Nice, and proceeded to Jerusalem, A.D. 1148, from whence they led back into Europe the miserable remains of those troops which had survived the disaster that had occurred in this expedition. Its unhappy issue has been ascribed principally to the jealousies and divisions that prevailed among the Christia,n chiefs in Palestine. Nor was it more ineffectual in Palestine than detrimental to Europe, by draining the wealth of its fairest provinces, and destroying such a prodigious number of its inhabitants. The third crusade was undertaken, A.D. 1189, by Frederic I. furnamed Barbarossa, emperor of Germany, whose example was followed, A.D. 1190, by Philip Augustus, king of France, and Richard Coeur-de-Lion, king of England. These two monarchs arrived in Paleline in the year 1191, and succeeded in their first encounters with the infidels. After the reduction of Acre or Ptolomais, the French monarch returned to Europe; and the king of England, who remained, pushed the war with great
great vigour, and not only defeated Saladin in several engagements, but made himself master of Jaffa and Caesarea. Defeated, however, by the French and Italians, and influenced by other weighty considerations, he concluded, A.D. 1192, with Saladin a truce of 3 years, 3 months, and 3 days, and soon evacuated Palestine with his whole army. A fourth crusade, if it may be so called, was undertaken by the Teutonic knights, in consequence of the miseries which the besiegers suffered at the siege of Acre, and at the inclination, or at least with the marked approbation of pope Celestin III., who confirmed the above-mentioned order by a bull issued on the 25th of February, A.D. 1192. The support of Chilfridian, the defence of the Holy Land, and the relief of the poor and needy, were the important duties and services to which the Teutonic knights devoted themselves by a solemn vow. The fifth crusade, A.D. 1198, was excited by an illiterate priest of the neighbourhood of Paris, Fulk of Neufly, who deferted his parochial duty, in order to assume the more flattering character of a popular and itinerant missionary. No sooner did Innocent III. ascend the chair of St. Peter, than he proclaimed in Italy, Germany, and France, the obligation of this new crusade. The eloquent pontiff described the ruin of Jerusalem, the triumph of the Pagans, and the blame of Chilfridian; his liberality proposed the remission of sins, and a peculiar indulgence to all who should serve in Palestine, either a year in person, or two years by a substitute; and among his legates and orators who blew the sacred trumpet, Fulk of Neufly was the loudest and the most successful. Although the principal monarchs of that period, the emperor Frederick, Philip Augustus of France, and Richard of England, were on account of their peculiar circumstances, not much inclined to engage in this expedition; nevertheless, the preacher was heard and obeyed by the great vaals, the princes of the second order, and the foremoat in the holy race was Thibaud, or Thibaut the young count of Champagne. His companion in arms was Louis, count of Bious and Chartres: and they were joined by a crowd of prelates and barons, who imitated their zeal, and whose names it is needless to mention. The operations of the war were debated in full and frequent assemblies; and it was resolved to seek the deliverance of Palestine in Egypt, a country, which, since Saladin's death, was almost ruined by famine and civil war. But as the French barons who took the lead in this business were destitute of ships and ignorant of navigation, they dispatched 6 deputies to Venice, to solicit, on motives of piety or interest, the aid of that powerful republic. The deputies were hospitably received; and after much deliberation and debate, they were authoritatively informed that they would assist them on certain conditions, which they proposed. They offered a considerable number of flat-bottomed boats and ships for the use of their hostes and foot-folders, to supply them with provisions for nine months, and to join the armament with a squadron of 50 galleys. But they required, that the pilgrims should pay, before their departure, a sum of 80,000 marks of silver; and that all conquests by sea and land, should be equally divided between the confederates. The treaty was ratified and preparations were made for the departure of the crusade. About the festival of Pentecost, A.D. 1203, Boniface, marquis of Montferrat, to whom the conduct of the enterprise was committed, displayed his banner and marched towards Venice at the head of the Italians; he was attended and followed by the counts of Flanders and Blois, and the most respectable barons of France; and their numbers were swelled by the pilgrims of Germany, who were actuated by views and motives similar to their own. The Venetians fulfilled their engagements. After obviating some difficulties that occurred in their negotiation, the fleet and army directed their first hostilities against Zara, a strong city in Scclavonia, which had renounced its allegiance to Venice, and implored the protection of the king of Hungary. This city was soon compelled to surrender; but this commencement of their military career occasioned great disgust and complaint. The pope excommunicated the false crusaders, who had pillaged and massacred their brethren, the Hungarians, actually enrolled under the banner of the cross; and none but the marquis Boniface and Simon of Montfort, who were absent, escaped these spiritual thunders. The crusaders formed an alliance with young Alexius, the Greek prince; who promised in his own and his father's name, that as soon as they should be seated on the throne of Constantinople, they would terminate the long feehim of the Greeks, submit to the lawful supremacy of the Roman church, pay the crusaders, for their services, 200,000 marks of silver, and accompany through Egypt, or maintain during a year 10,000 men, and during his life, 500 knights, for the service of the Holy Land. The alliance was ratified by mutual oaths and feals. They then proceeded towards Constantinople with all possible speed, which they suffered and captured. Thus was this crusade diverted from Syria to Constantinople, and the conquest of the Greek or Roman empire by the Latins.

The sixth crusade was undertaken A.D. 1217, under the pontificate of Hiotiorius III. by the confederate army of Italy and Germany. The allied army was commanded by Andrew, king of Hungary, who was joined by Leopold, duke of Austria, Lewis of Bavaria, and several other princes. In this crusade 200,000 Franks were landed at the eastern mouth of the Nile, and it was expected that Palæstine might be subdued in Egypt, the seat and stronghold of the infidels. After a few months absence Andrew returned into Europe. The remaining chiefs carried on the war with vigour, and in the year 1220 made themselves masters of Damietta, the strongest city in Egypt; but their prosperity was of short duration; for in the following year their fleet was totally ruined by that of the Saracens, their provisions cut off, and their army reduced by sickness and other causes to the greatest distress. This irreparable loss was followed by that of Damietta, and their expectations were completely frustrated. By the evacuation of Damietta they obtained a safe retreat, some compensations for the pilgrims, and the tardy refutation of the doubtful relic of the true crosses. The failure has been ascribed, in some measure, to the abuse and multiplication of the crusades, which were preached at the same time against the Pagans of Lycia, the Moors of Spain, the Albigenses of France, and the kings of Sicily of the imperial family.

A seventh crusade was undertaken by the emperor Frederick II., who left out A.D. 1229, after having been excommunicated for his delay by the incensed pontiff Gregory IX. As soon as he landed in Palæstine, he turned all his thoughts towards peace, and without consulting the other princes and chiefs of the crusade, concluded, A.D. 1229, a treaty of peace, or rather a truce of 10 years, with Melch-Camel, sultan of Egypt. He flippurated, among other things, that he should be put in possession of the city and kingdom of Jerusalem; which condition was immediately executed, and the emperor, entering into the city with great pomp, placed the crown upon his head with his own hands; and he then returned without delay into Italy, to appease the discord and commotions which the vindictive and ambitious pontiff had excited in his absence. The expeditions that followed were of less important and less successful.
ful. In 1259 Theobald VI., count of Champagne and king of Navarre, set out from Marseilles for the Holy Land, accompanied by several French and German princes; and in the following year another expedition was undertaken by Richard, earl of Cornwall, brother to Henry III., king of England. The former of these expeditions failed through the influence of the emperor's ambassadors in Palestine, who renewed the truce with the Mahomnetans; while, on the other hand, a considerable body of Christiains was defeated at Gaza, and thus as escaped the carnage returned to Europe. This fatal event was chiefly owing to the difcreet that subsisted between the Templars and the knights of St. John of Jerusalem. Hence it happened, that the arrival of Richard, indubitable retarded by Gregory IX., and which had somewhat revived the hopes of the vanquished, was ineffectual to repair their los. The utmost which he could accomplish was to conclude a truce with the sultan of Egypt, in the year 1241, after which he immediately set sail for Europe.

The eighth crusade was undertaken by Louis IX., king of France, in consequence of a vow which he had made in the year 1248, on occasion of a very dangerous illness: his first attempts, after he had arrived in Egypt with a formidable army and a numerous fleet, were crowned with success; for Damietta yielded to his arms; but the progress of the war presented one uniform scene of calamity and desolation. Famine and pestilence overthrew the royal army in 1250; Robert, earl of Artois, the king's brother, was slain in an engagement with the Saracen army; and, a few days after, the king himself, with two other brothers, and the greatest part of his army, were taken prisoners in a bloody action after a bold and obstinate resistance. The ransom of this prince, together with the restoration of Damietta, cost a sum, which in our days would amount to about 150,000 pounds sterling. After having remained four years in Palestine, he returned to France in 1254, with the small remnant of his formidable army.

The ninth, and last, crusade was renewed by the same valiant, but unfortunate monarch; who, with a formidable fleet and a splendid train of princes and nobles, arrived upon the African coast, and made himself master of the fort of Carthage. But a pestilential disease broke out in the fleet, in the harbour of Tunis, carried off the greatest part of his army, and left at last the sovereign himself, who fell a victim to its rage on the 25th of August, A.D. 1270. Louis was the last of the European princes that embarked in the holy war; the dangers and difficulties, the calamities and disasters, and the enormous expenses that accompanied each crusade, dispirited the most zealous, and discouraged the most intrepid promoters of these fanatical expeditions.

Towards the beginning of the 14th century, several attempts were made by the monarchs and princes of the west, inflamed by the Roman pontiffs, to renew the war in Palestine against the Turks and Saracenis. But their succeses was not answerable to their zeal. Clement V. urged this business with the greatest ardour in the years 1307, 1308, and appropriated an immense sum of money for carrying on it with alacrity and vigour. John XXII. ordered a fleet of 10 ships to be fitted out in the year 1319 to transport an army of adventurers into Palestine, and had recourse to the influence of indulgences for raising the funds necessary to the support of this great enterprise. But it was a ground of complaints against their pontiff, that he made use of the holy war as a pretext to diff se his avarice and ambition. Under the pontificate of Benedict XII., a formidable army was raised in the year 1330, by Philip de Valois, king of France, with a view of attempting the deliverance of Chris-
warchs of different kingdoms, nine of whom engaged in the
first crusade, seized this opportunity of annexing considera-
tible territories to their crowns at a small expense. The
feis likewise of those great barons who perished in the holy
war and left no heirs, reverted to their respective sovereignties;
and by the power of the papal and secular authority, the
prerogatives of sovereignty were also extended in con-
sequence of the departure of those powerful vassals, who were
accustomed to limit and control it; and thus they acquired
a degree of weight in the constitution which they had not
formerly possessed. Those who followed the cors were
taken under the special protection of the church, and it
denounced its anathemas against such as should disturb and
wrong them; hence hostilities would be for a time suspended,
and extinguished; and a more general and steady admin-
istration of justice would be introduced, and some advances
would be made towards the establishment of a more regular
government in the several kingdoms of Europe. The com-
mercial effects of the crusades were not less considerable
than those that have been already recited. Venice, Genoa,
and Pisa, and their respective states, to which the crusaders
embarked; and these cities received immense sums for freight
on account of numerous armies. The crusaders also con-
trasted with them for provisions and military stores; and
while the fleets kept on their coasts as the armies advanced
by land, these states engrossed all the profits of that lucrative
branch of commerce. Besides, they obtained grants of the
most extensive immunities in the several settlements which
the Christians made in Asia. When the crusaders seized
Constantinople, and placed one of their leaders on the
imperial throne, the Italian states were considerable gainers
by that event. Many valuable branches of the commerce,
which formerly centered in that city, were transferred to
Venice, Genoa, or Pisa. The wealth which thus flowed
into these cities served to enslave and to maintain their
liberty and independence. By the increase of wealth, which
was owing to the commerce resulting from the crusades, a
spirit of activity and a passion for liberty and independence
were excited; so that before the conclusion of the last cru-
 fade all the considerable cities of Italy had either purchased
or had extorted large immunities from the emperors. See
City and Charters of Community.
In tracing the consequences and effects of the crusades, Mr.
Gibbon states, that the intercourse between Constantinople and
Italy diffused the knowledge of the Latin tongue; and several
of the fathers and classics were at length honoured with a
Greek version. If we compare, he says, at the era of the
crusades, the Latin of Europe with the Greeks and Arabs,
their respective degrees of knowledge, industry, and art;
our rude ancestors must be content with the third rank in
the scale of nations. Their successive improvement and
present superiority may be ascribed to a peculiar energy of
character, to an active and imitative spirit, unknown to their
more polished rivals, who, at that time, were in a stationary
or retrograde state. With such a disposition, the Latins
might have derived essential benefits from events which opened
to them a long and frequent intercourse with the more
cultivated regions of the East. Their first and most obvious
progress was in trade and manufactures, in the arts, which
are strongly prompted by the thirst of wealth, the calls of
necessity, and the gratification of the senses or of vanity.
But the intellectual wants of the Latins were more slowly
felt and supplied; and in the age of the crusades, they viewed
with careles indifference the literature of the Greeks
and Arabs; nor did they derive any substantial advantage
from it. The principle of the crusades was a savage fanati-

cism; and the most important effects were analogous to the
curse. Each pilgrim was ambitious to return with his sacred
spoils, the relics of Greece and Palestine; and each relic
was preceded and followed by a train of miracles and visions.
The active spirit of the Latins preyed on the vices of their
reason and religion; and if the 9th and 10th centuries were
the times of darkness, the 13th and 14th were the ages of
abundance and folly. The embers of the arts of antiquity,
Mr. Gibbon conceives, were rekindled by the northern
conquerors of the Roman empire; and after a long interval,
from the reign of Charlemagne forward, the tide of civil-
zation began to flow, about the 11th century, with a steady
and accelerated course. During the two centuries of the
crusades, its increase was great, and its progress rapid; and
some philosophers, as we have already stated, have applau-
ed the propitious influence of the holy wars: but Mr.
Gibbon thinks, that they checked rather than forwarded the
maturity of Europe. The lives and labours of millions, which
were buried in the East, would have been more profitably
employed in the improvement of their native country; the
accumulated flock of industry and wealth would have over-
flowed in navigation and trade; and the Latins would have
been enriched and enlightened by a free and friendly cor-
respondence with the climates of the East. In one respect
Mr. Gibbon perceives the accidental operation of the cru-
sades, not so much in producing a benefit as in removing an
evil. "The larger portion of the inhabitants of Europe
were chained to the soil, without freedom, or property, or
knowledge; and the two orders of ecclesiastics and nobles,
whose numbers were comparatively small, alone deferred
the name of citizens and men. This oppressive yoke was sup-
ported by the arts of the clergy and the swords of the
barons. The authority of the priests operated, in the darker
ages, as a salutary antidote;—they prevented the total ex-
tinction of letters, mitigated the ferocity of the times,
forestalled the poor and defenceless, and prepared or revived
the peace and order of civil society. But the independence,
rising, and discord, of the feudal lords were unmixed with
any benefit of good; and every hope of industry and
improvement was crushed by the iron weight of the martial
arbitrariness. Among the causes that undermined that Go-
thic edifice, a conspicuous place must be allowed to the cru-
sades. The states of the barons were dilapidated, and their
race was often extinguished, in these costly and perilous
expeditions. Their poverty extorted from their pride these
charters of freedom which unlocked the letters of the
life, secured the farm of the peasant, and the shop of
the artificer, and gradually restored a subsistence and a toil to
the most numerous and useful part of the community. The
confignation which destroyed the tall and barren trees of
the forest gave air and scope to the vegetation of the smaller
and intrinse plants of the field."—Gibbon's Hist. Rom.
Emp. vol. ii. Robertson's Hist. ch. iv. vol. i. Hist. Dif-
qul. concerning India, p. 133. &c. Smith's Wealth of
Nations, vol. i. ch. 3. Moftem's Eccle. Hist. vol. ii. and
iii. Hume's Hist. vol. i. and ii.
Towards the middle of the 12th century, A. D. 1122,
there was also a crusade of the Saxons, against the pagan
of the north, whom they determined either to convert or
to extirpate. The attempt produced the usual effects, ra-
vages and murders, and then was dropped. In this crusade
the archbishop of Magdeburg, the bishops of Halberstadt,
Münster, Merseburg, Brandenburgh, &c. with several lay-
lords, embarked. And towards the beginning of the same
century, under the pontificate of Innocent, there was also
a crusade undertaken against the Albigensians; who were
become powerful in Languedoc, &c. and who had no other
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crime but that of rejecting the tyranny, idolatry, and super-
flations of the church of Rome. See ALBIGENSES.

When the opinions of Wickliffe were disseminated in
Bohemia, as well as in England, the court of Rome was
much alarmed; and pope Martin V., published a bull, A. D.
1428, which he sent into England, as well as into other
countries, commanding solemn procedures to be made, on
the first Sunday of every month, in all churches and church-
yards, in order to draw down the vengeance of heaven on the
heretical Bohemians; and promising 60 days' indulgence
to all who attended these proceedings, or who fasted 25 pater-
nosters, with the same pious intention. His holiness, not
trusting entirely to supernatural interposition for the de-
struction of the enemies of the church, proclaimed a croisade
against the Bohemians, granting the pardon of all their
sins, and the happiness of heaven, to all who contributed to
its success, in proportion to the value of the contribution.
Many of the English engaged in this croisade, which was
conducted by the cardinal of Winchester.

The capture of Constantinople, May 29, A. D. 1453,
by Mohammed II., conqueror of the Turks, alarmed all the
Christian princes and states of Europe. But these princes
and states were so much engaged in war, that they could not
unite against the common enemy, but left it to the clergy to
wield their spiritual weapons against those adversaries of the
Christian faith. Archbishop Kemp published in England
March 2, A. D. 1453, an order for processions to be made
for a whole year, and he was followed in this course by his
successor; processions being then regarded as the most ef-
f#ctual means of obtaining the divine favour and assistance.
At length pope Pius II. (Enea Silvius), published a long,
eloquent, and pathetic bull, A. D. 1463, enjoining the
Turks, and most earnestly exhorting all Christians to take
the crois, or to contribute by their money to the fur-
cels of the expedition; promising the pardon of sin, and the
happiness of heaven to all who complied with his desire:
at the same time the pope feated bulls into every Christian
country, imposing a tax of one-tenth on the benefices of all
the clergy. Edward IV., then king of England, not
willing to acknowledge the pope's right to tax his clergy,
and yet desirous that they should, on this occasion, contribute
liberally, wrote to the priors to raise a hand-fast sum by
voluntary assessment, which would satisfy the pope, and
prevent the publication of his bull. This plan was adopted;
but it was with great difficulty that the priors could pre-
vent on the clergy to grant six-pence in the pound.

CROISE. Lake of. See LAKE.

CROISES, or CROISSES, in our Ancient Caliains, pilgrims
bound for the Holy Land, or who had already been there;
so called from a badge which they wore on their garments,
representing a crois. See CROISADE.

The word croise is also extended to the knights of St.
John of Jerusalem, erected for the defence and protection of
pilgrims; and all those of the nobility, gentry, &c., who,
in the reigns of king Henry II., Richard I., Henry III.,
and Edward I., were cruce signati, i.e. dedicated themselves
to the wars for the recovery of the Holy Land.

CROISIE, L., in Geography, a small town of France, in
the department of the Lower Loire; 9 miles N. of the
mouth of the Loire, with a good harbour, and 506 miles
S.W. of Paris. E. long. 15° 8' 18", and N. lat. 47° 17'
40", according to the French computation. It is the chief
place of a canton, in the district of Savennay, and one of the
84 maritime quarters into which all the principal sea-port
towns of France are divided, with a judge of admiralty, to
whom the maritime jurisprudence of St. Nazaire, Montoir, Me-
quille, and Redon are subordinate, and who, in his turn, is
subordinate to the admiralty court of I. Orient. Le Croi-
sie contains 2510, and the canton itself 5364 inhabitants in
two communes, and on a territorial extent of 52½
kilometres.

CROISIERS, CRUCIGERS, or Crois-Bearers, a religious
order, or congregation of regular canons, so called.

There are three orders which have, or do still bear this
name; one in Italy; another in the Low Countries, and a
third in Bohemia.

The first pretend to be derived from St. Clet; and add,
that St. Quiricus the Jew, who showed S. Helena the
place of the true crois, and was afterwards converted, re-
formed them. All we know for certain is, that they sub-
mitted in Italy before Alexander III. mounted the throne;
for that pontiff, flying from Frederic Barbarossa, found an
asylum in the monasteries of the croisiers, which he after-
wards, in 1169, took under his protection, giving them the
rule of St. Augustine, &c.

They were confirmed by Pius V.; but the discipline being
much relaxed, they were suppressed, in 1576, by Alexander
VII.

Matt. Paris says, that the croisiers, bearing staffs with
croises at the end, came into England in 1244, and pretend-
ed themselves before a synod held by the bishop of Rochef-
ter, demanding to be admitted. They were here called
croisiers.

Dodsworth and Dugdale mention two monasteries of this
order in England, the one at London, the other at Rye-
gate; the first founded in 1245, the latter in 1258; some
add a third at Oxford, where they were received in 1349.
M. Allemand says, there were fourteen monasteries of crois-
bearers in England: adding, that they came from Italy;
these of the Low Countries disowning them.

The croisiers of the Low Countries and France were
founded in 1211, by Theodore de Celles, son of Bobon,
who, having served in a croisade in Palestine, in 1189,
and there found some of the croisiers instituted by St. Clet,
conceived a design of instituting another congregation in his
own country. This is certain, that Theodore, in his return
from Palestine, engaged himself in the ecclesiastical state;
and went in quality of missionary to the croisade against
the Albigenses: and that at his return, in 1211, the bishop of
Ligue gave him the church of St. Thibault near Huy;
where, with four companions, he laid the foundation of his
order; which was confirmed by Innocent III. and Hono-
ratus III. Theodore sent his religious to Touloufe, to join
those of St. Dominic, and combat the Albigenses; and the
congregation multiplied in France. The popes have en-
deavoured to bring the croisiers of Italy under those of
Flanders. The croisiers, or port crois with a flag, in Bo-
ehmas, derive their origin from St. Quiricus, and say they
came from Palestine into Europe, where they embraced the
rule of St. Augustine, and built monasteries. They add,
that St. Agnes of Bohemia, to distinguish them from other
croisiers, obtained from Innocent IV. to add a flag to their
habit. But the story of St. Quiricus has no foundation;
and it was Agnes herself, daughter of Primula, king of
Bohemia, who instituted the order at Prague, in 1234.
Their are very numerous, and have now two generals.

CROISILLES, in Geography, a small town of France,
in the department of Pas-de-Calais, chief place of a canton,
in the district of Arras, with a population of 972 individuals.
The canton has 28 communes, and 13,487 inhabitants, upon
a territorial extent of 185 kilometres.

CROISSANT, in Heraldry, denotes the half moon, looking to the left side of the field.
CROISSANT;

Croix, a crescent, or half-moon, fixed on each end thereof.

CROISSILE, in Geography, a town of Savoy, in the duchy of Geneva; 11 miles N.N.W. of Annecy.

Croisy, a small town of France, in the department of Seine and Marne; 17 miles E. of Paris, and 3 miles from the left shore of the Marne. Before the French revolution of 1789, it conferred the title of marquis on the lords of the manor.

CROZES ROMOIS, in Ancient Geography, the name given to the territory of the town of Croiz, situated in Provence.

CROUS, Jow, in Biography, a French Protestant minister, who flourished in the 17th century, was born at Uzeze, where he officiated as a minister. He was a considerable writer on controversial subjects; but his principal work was in Latin, intitled, "Observations faciles et historiæ in Novum Testamentum," 1644. In early life he was reckoned a high Calvinist, but afterwards embraced the sentiments of the Universalists. He died in the year 1659.

CROIX-DU-MAINE, Francis GODÉ DE LA, a writer frequently referred to by the French literati, was born in the province of Maine in 1552. He was educated at Paris, and discovered, at an early age, a great passion for collecting books. In 1584, he published a general catalogue of all French writers, intitled, "Bibliothèque Françoische." He was author also of a plan of a complete library, addressed to Henry III. He was assassinated at Tours in 1592. A new edition of his Bibliothèque was published with that of Verdiere, in 5 vols. 4to. 1722, 1727.

Croix, de LA, G. A French landscape-painter of some eminence, the nephew of Vernet, whose style he adopted. Several prints have been engraved from the pictures of this master. We shall only mention the following: "Le Tybre, paysage & les orientaux au bord du Tybre," 2 large pieces, lengthways, engraved by Allamet. "La Caisse où le Viole," by de Flamet. "Vue de Mont Veuve," as it appeared in 1757, lengthways, 1762, by Le Mire. Heinecken.


Croix, LA, en Brie, in Geography, a small town of France, in the department of Seine and Marne; 6 miles W. of Provins, formerly a commandery of the order of Malta. — Allo, a small town of France, in the department of Eure; 6 miles N.E. of Evreux, properely called La Crois Saint Leufroy.

Croiz, LA, a mountain of Piedmont, in the district of the Four Valles; 13 miles W. of Figaredo.

Croiz, Cape, a cape on the W. coast of Africa, in the Mediterranean. N. lat. 36° 38'. W. long. 6° 55'.

Croiz, Sainte, Santa Cruz, one of the three Carribbean islands of the Virgin Group which the Danes possesed in the West Indies, until the latter end of December, 1807, when the three Danish islands surrendered by capitulation to the English. Denmark had purchased St. Croix from France in 1733. It is situated about five leagues east of St. Thomas, in the 64th degree of western longitude, and the 18th of north latitude, ten or twelve leagues long, three or four broad, and intersected by several small rivers. The air is rather unhealthy at certain times of the year, the whole island being above low level. The soil is uncommonly fertile.

St. Croix has many valuable sugar and cotton plantations. It used to export annually from 20 to 24,000 hogsheads of sugar, from 7 to 3000 pinches of rum, and 150 cwt. of cotton. Christiansted was the residence of the Danish governor. The population of this town exceeds 5000 individuals, and it has a good harbour.

In 1766 this island had a population of 2223 white, 1164 free negroes, and 25,435 negro slaves; but the importation of slaves into the Danish islands ceased since 1803. There were in St. Croix 160 sugar plantations, each of which gave 150 hogsheads of 100 cwt.

The other two Danish West India islands, which are likewise in possession of the English at present (1808), are St. Thomas and St. John. The three islands had been taken by the English in 1801. During the short war between Great Britain and Denmark, on account of the revived convention of armed neutrality; but they had been restored after the memorable battle of Copenhagen of the 27th of April, 1801. (Oxholm's Danish Account of the Danish West India Islands. — Allo, a small town of France, in the department of the Upper Rhine, 12 miles north of Ensfheim, in the district of Colmar.

Croiz, St., or Santa Cruz, a town of Luconia, one of the Philippine islands, which is separated from Manhattan by a river that flows under the walls of this city, and serves as a harbour for merchant ships. St. Croix is in part equally well built with the capital; peopled with Indians and Spaniards in considerable numbers, and surrounded by three villages of the natives, which may be regarded as suburbs.

Croiz, St. a small navigable river in Nova Scotia, which runs into the Avon or Pigiguit. — Allo, a river which forms part of the boundary-line between the United States of America, and the British province of New Brunswick, and discharges itself into Passamaquoddy bay. — Allo, a river in the north-west territory, which runs into the Missipilli from the N.N.E. about 50 miles below the falls of St. Anthony.

CROLIES, a small town of France, in the department of the Yere, 12 miles N.E. of Grenoble.

CROMA, Ital. in Music, the character which in English is called a quaver. It is the eighth part of a semibreve; has a black head, like a crotchet, and a hook at the tail: thus, when single, but when united with other quarters, it has a single tic; thus, See Crotchets, and Time-Table.

CROMACII CRAIG, in Geography, a mountain of Scotland, in the county of Perth; 5 miles N. of Crieff.

Cromack Head, a cape of Scotland, on the N. coast of the county of Banff; 3 miles N.W. of Cullen.

Cromarty Harbour, in Cromartyshire, in Scotland, is a picturesque and safe retreat for ships, at the entrance of Murray Firth, about 18 miles to the eaitward of the commencement of the Inverness and Fort William, or Caledonian canal; see Canal. This harbour was surveyed in 1801 by Mr. Thomas Telford, with a view to some improvements therein for the better accommodation of ships, intending to pass or having passed the Caledonian canal, connecting the caill and well British seas.

Cromary, a town of France, in the department of the Seine, and district of Vezoul; 25 leagues N. of Besançon.

Cromatic French Horns, in Music, were instruments manufactured
CROMBACH, a town of Germany, 7 miles N.E. of Steen.

CROM, or CROM, in Agriculture, a name provincially applied to an implement of the fork kind, with crooked or hooked prongs. Thus we have muck croms, turnip croms, &c.

CROMER, Giulio, called Il Croma, in Biography, a painter of some reputation in his time, who was born in Ferrara, about the year 1552. He was the scholar of Domenico Mora, but his style more resembles that of Jacopo Bambini, another Ferrarese painter of that period. The pictures of this artist evince much study, and considerable correctness of design; but they are characterized by the reddish tint which pervades his carbuncles, and a too ostentatious introduction of architectural decoration. In the church of S. Andrea in Ferrara are several large compositions by this master, representing actions of that saint, besides some smaller altarpieces. Cromer died in 1632.

Cromer, in Geography, a town of England, situated on the N.E. coast of the county of Norfolk, having a harbour for fishing vessels, and chiefly inhabited by fishermen. Attempts have been made for erecting a pier, but hitherto without success, the sea washing it away. This town appears to have been formerly much larger than it is now: as it had two churches, one of which has been demolished by the inundation of the sea. It is now a place of resort for fishing-boats; and has a weekly market on Saturday; 23 miles N. of Norwich, and 127 N.N.E. of London. N. lat. 52° 55'; E. long. 0° 50'.

This place has not harbour for ships, but vessels of 60 to 100 tons burthen are laid upon the sandy beach, where carts can be drawn to them when the tide retires, and thus, coal, tiles, oil-cakes, and other commodities are imported for the use of the inhabitants, and some corn is exported. A lighthouse stands about three-quarters of a mile easterly of the town, lighted by 15 argand lamps, each with a large plated copper reflector behind it, arranged round an upright axis, which, by means of a large clock-movement, is made to revolve once in a minute, countinly prenting to the mariner off the coast, a series of moving lights, so different from any other, as to be immediately distinguished in the night.

CROMFORD CANAL. This is the parliamentary name of a navigable canal in the counties of Nottingham and Derby, of about 18 miles in length, cut about 15 years ago, for carrying coal, corn, &c. up into the mining district of Derbyshire, and bringing down lead, mill-stones, grind-stone, lime-stone, marble, &c. for exportation, by means of the Erewath and Nottingham canals with which it connects; see our article Canal, wherein we omitted to mention a short collateral cut to Lea bridge stone-fawing mill and wharf; it is near half a mile in length from the Derwent aqueduct bridge, and is level with the line, except in time of floods, when a lock is used for turning the same over to the weir at its top, into Lea brook. Messrs. Davison, Shaveley, Benjamin Outram, and Edward Fletcher, were employed as engineers with Mr. Jeffep, on different parts of the works of this canal.

CROMFORD, a town in the parish of Wirksworth, Derbyshire, within 35 years past this place has increased in population, so as to have become a considerable town: the Cromford Canal terminates at this town (which see). Cromford founth, a subterranean drain or sewer of about two miles in length, cut in the solid lime-stone rock, for freving the lead mines nearer Winster of water, at an expense exceeding 30,000 l., gave rise to the subsequent prosperity of this place, by furnishing an opportunity to Mr., afterwards sir, Richard Arkwright, to erect his first cotton spinning mill, to which another similar establishment has since been added. The late Mr. Richard Arkwright erected a spacious and convenient chapel of ease for this town, of the salmon-coloured grit stone, which is dug on the S. E. side of the town, above the lime-stone Shale stratum. The same patriarchal individual contributed much to the ornament of the environs of this town, by his plantations and other improvements. Stocking-weaving and lace-weaving are carried on to some extent in this town, the inhabitants, the girls in particular, are much subject to a disease called the thick neck, from a tumour which forms in that part, which is said by some to be hereditary.

CROMIS, in Ichthyology, the coracinus bresiliensis of Ray, the guanocula of Maregravre, and the labrus cromis of Gmelin; which see.

CROM-LECHE, in British Antiquity, derived, according to the conjecture of Mr. Rowlands, from the Hebrew crom-leach, a devoted stone or altar, are huge, broad, flat stones, raised upon other stones set up on end for that purpose. They are common in Anglesey; and Mr. Rowlands (Mona Antiqua Relaxarata), supposes, that they are the remains of altars erected there by the first colonists. Mr. Gough, in his "Antiquities of Great Britain," supposes, that these cromleche were Danith monuments. Mr. King, in his "Monumenta Antiqua," vol. i. inclines to think, that they were altars for idolatrous sacrifices. Mr. Toland also, in his "History of the Druids," mentions, that the cromleche were altars of a larger size than those denominated "carns," or "cairs," and confining of a greater number of stones; some of them serving to support the others, on account of their enormous bulk. They were placed in the centre of the circular temples of the Druids, and near them has been found, occasionally, a proficuous stone, which served as a pedestal to some deity. He lays, that they were places of worship, and so called from beowling, the word being derived from crome or crom, which, in Armorie, Irish, or Welsh, signifies "hunt," and lech, or lech, "a broad stone," and signifying the bowing-stone. Mr. Toland mentions a cromlech in Newen parish in Penbrokeshire, South Wales, having the middle stone 18 feet high, and 9 broad towards the base, but narrowing upwards: and at there lay a broken piece 10 feet in length, which seemed to be of a weight heavier than 20 oxen could draw. But at Poitiers in France, there is one supported by 5 lefer stones, much exceeding all in the British islands, as it is 50 feet in circumference. This he conceives to have been a "Rocking-stone." At Bedyour, in Anglesey, there is a noble cromlech; many of them are 30 ton in weight; but they differ in size, as all pillars...
pillars do; and the altars are always larger than the "Kilih-vaen." In some parts of Wales these stones are called "Meicungydr," importing the same with "cromlech." In Caithness, and other remote parts of Scotland, these cromlechs are very numerous, some of them pretty entire, and others, not so much confused by time and overturned by storms, as disordered and demolished by the hands of men. But no such altars were ever found by Olaus Worms, the great northern antiquary, nor by any others, in the temples of the Gothic nations, or of those who speak the several dialects of Gothic original, from Ireland to Switzerland, and from the Bril in Holland, to Prerburg in Hungary, the Bohemians and Poles excepted. Among the Germans there were no Druids, and they had no sacrificial altars; and therefore to the former altars were as nexitles as they were necessary to the latter. In Jorsey likewise, as well as in the other neighboring islands, there are many altars and cromlechs. The principal cromlech in Ireland was "Crom-crunch," which stood in the midst of a circle of 12 obelisks, on a hill in Brefin, a district of the county of Cavan, formerly belonging to Leirtrim. It was wholly covered with gold and silver; the latter figures on the 12 stones about it being only of brass; which metals, both of the stones and statues they bore, became everywhere the prize of the Christian priests, upon the conversion of that kingdom. The druidical altars of a smaller size were called "carns," or "carins." These cemis consisted of stones of all forts, from one pound to a hundred; they are round in form, and somewhat tapering or decreasing in size upwards; but on the summit was always a flat stone; some of them contain at least 100 cart-loads of stone: and if any of them be grown over with earth, it is by accident, in the long course of time during which they have been neglected; for this was not intended when they were first constructed, as was the case with regard to the sepulchral barrows of the Gothic nations, which are generally of earth. Such a place is in the ancient Celtic language, and in every dialect of it, called "Carn," and every carin was so disposed as to be within view of some other. On the carin, called "Crig-y-dyuan," in the parish of Trefiel, in Carmarthenshire, the flat stone on the top is 3 yards in length, 5 feet over, and from 10 to 12 inches thick. The circumference of this carin at the base is about 60 yards, and its height about 6 yards; the ascent being very easy; though perhaps a ladder was originally used for this purpose. In processes of time, the cemis conferred every where for beams; though they were originally designed for fires of another nature. See Belenus and Beltein.

Of the altars called carins, many are to be seen entire in Wales, particularly two in a parish of Denbighshire, hence called "Kerig-y-Dracon," or Druid's stones, and one in Llan-Hammwich parish, in Brecknockshire. These Druids' altars were commonly placed in the middle of the temples, near the great stone or colossus, which we have already mentioned; such as that at Carn Llacht, in the parish of Llan-gwelach, near Swansea, in Glamorganshire, and others in Scotland. These are called by the Welsh, in the singular number, "Kilih-vaen," that is, a stone-chest; and in the plural, "Kiliye-vaen," stone-cists. But they denote things quite different from those real stone-chests or coffins, commonly of one block and the lid, that are in many places found under ground. Wherever a circle occurs without an altar, it is certain that there was one formerly; as altars are found where the circular obelisks are moist or all taken away for other uses, or from an opinion to this superstition, or because time has destroyed them. Those who adopt the opinion, now commonly received, from the bones which are often found near these altars or circles, though seldom within them, that they were burying-places, forget what Cesar, Pliny, Tacitus, and other authors affirm, concerning the human sacrifices offered by the Druids; and in mistaking the ashes found in these carins, they betray an ignorance of those anniverary fires and sacrifices for which they were reared. The huge coping-stones of these carns were to serve as altars, and altars of the lier form are frequently found near them; as in the large Latin and Greek churches, there are, besides the high altar, several smaller ones.

Crommyon, or Cronymus, in Ancient Geography, a promontory of the isle of Cyprus, at the extremity of the peninsula, towards the north, between Soloe to the north-west, and Lapathus to the south-east. It is now Cape Carmaggiotti.—Also, a village of Greece, in the territory of Corinth.

Crommyonesus, the name given by Pliny to a small island of Acha Minor, which he places in the vicinity of Smyrna.

Cromna, a town situated on the coast of Paphlegonia, near the river Pathenius. Steph. Byz. supposes this place to have been the ancient Amalfis; but Arrian states that they were at the distance of 1200 stadia from one another. The destruction of Cromna, however, contributed to the aggrandizement of Amalfis.

Cromnum, a town of Greece, in the Peloponnese, situated near Megalopolis.

Cromont, in Geography, a small town of France, in the department of the Somme, 9 miles E. of Abbeville.

Cromorne, Fr. in Majes, a reed-flup in most of our old organs, built by Father Smith, and other Germans. And we believe that the word is of German origin; as RUMON is crooked, and the name of this flup should be written KROHON. Whether it was at first intended that the tone of this flup should imitate a cornt, a shawn, or a bassoon, is not settled. Menage, in his dict. Etym. thinks the latter; and the tone certainly resembles a bassoon more than any other instrument.

Crompton Point, in Geography, the N.E. point of the island of Dominica. N. lat. 15° 42'. W. long. 61° 21'.

Cromwell, Thomas. cart of Effex, in Biography, was the son of a blacksmith at Putney, in Surrey, but who became involved with great authority, and at length was favored by the prince whom he had long and faithfully served. In what manner Thomas Cromwell was educated, and for what purpose he was particularly intended does not appear; but we find him early in life settled as clerk to the English Consistory at Antwerp. In the year 1510, he visited Rome; and it has been thought he served as a soldier in the duke of Bourbon’s army, and that he was present when that city was plundered. See Rome. As, however, this happened in the year 1547, and it is known that Cromwell was actively employed in England sooner than this period; the conjecture is probably without foundation. He was patronized by cardinal Wolsey, and affiliated him in founding the two colleges at Oxford and Ipswich, and in procuring, in 1525, the suppression of some monasteries for their endowment. When the cardinal was disgraced, Cromwell used his utmost efforts to restore him to his sovereign’s favor; and by his exertions in the house of commons, of which he was a member, he prevented the passing of the articles of treason exhibited against him. For his intrepidity on this occasion, he obtained the king’s favor, and was taken into his service, in which he engaged with more zeal than honesty. Heuggested to Henry a project for raising a supply of money of his clergy, which, through fear grew up, as a gift, about 120,000. For this and other services he obtained
obtained the honour of knighthood, which was in higher estimation at that period, than it is now; he was also appointed one of the privy-council; and in 1534 rose to the posts of principal secretary of state and master of the rolls. In the following year he took an active part in the suppression of the monasteries, for which purpose he was made vis-\(^\text{a}-\text{vis}^\text{itor}-\text{general}, and is said to have exercised the office without any regard to the principles of justice or humanity. His services were, however, rewarded by the king, who advanced him to the post of lord-keeper of the privy-seal, and to a seat in the house of peers, by the title of lord Cromwell of Okeham. After the abolition of the pope's supremacy, lord Cromwell, under the title of king's-vicer-general, was placed at the head of the whole ecclesiastical power in the kingdom. His influence in this situation he employed in favour of the reformation, to which he was apparently much inclined from conviction, having in early life committed to memory Erasmus's translation of the New Testament, and having been propounded in favour of the principles of the reformers during his residence in the Low Countries. Without referring to the minister acts by which he promoted the cause which he had espoused, we may observe that he encouraged an English translation of the Bible, of which, when finished, he directed a copy to be provided for every parish church. This in those times was the most important and truly valuable gift that could have been made to a parish. Honours were still increased on the head of lord Cromwell; he was appointed chief justice inerant of the forefells beyond Trent, and in 1539 was advanced to the dignity of earl of Essex, and lord high chamberlain of England. His fortune and his property in land were augmented in full proportion to his rank in life; he obtained many noble manors and estates out of the wreckage of the religious foundations. Envy and ill-will were, however, the constant companions of his good fortune; he had in various instances laid himself open to his enemies, who never failed to take every advantage of his failings. The clergy hated him for his exactions on their body; the ancient nobility detested him on account of the meanness of its origin, and his sudden elevation to the highest distinctions of the state. To the friends of law and justice, his arbitrary proceedings against the innocent, or at least against those who were not permitted to defend themselves, rendered him justly obnoxious. He had been chiefly instrumental in procuring the condemnation of the countesses of Salisbury and the marchionesses of Exeter, on charges of high treason. Under such circumstances he could hardly, hope to finish his career without fame or repute, especially since his only fertility was the will of a prince who was guided by no principle, but that of gratifying his own passions at any price. Cromwell had recommended Anne of Cleves to Henry as a wife; from her he hoped for support in the cause of the reformation, being a Lutheran. Her person did not answer the expectations of the king; he determined to dismiss her, and to arrange himself on Cromwell, who had been the means of uniting them. He was accordingly arrested at the council table by the duke of Norfolk, a zealous catholic, on the charge of high treason; and, in conformity to the wicked precedent which he had given, he was condemned without being permitted to justify himself. He pleaded by an humble petition with the king; thence was the prayer of the supplicant read to his majesty, but he was inexorable; the great men of the court were rarely forgiving, and Henry VIII was not an exception to this rule. Cranmer, whose character we have already discussed and appreciated, was the only friend who ventured to acknowledge Cromwell in his misfortune: he wrote to the king, attacking from his own knowledge, the loyal attachment of his faithful servant, and affirming, that "he loved him so lovingly no less than his God." The decree was however passed, and Cromwell was beheaded on Tower-hill, July 28, 1540, declaring with his last breath that he died in the catholic faith; which is scarcely to be accounted for on any principle of human action. Thus fell Thomas Cromwell, earl of Essex, under the weight of a tyrant's displeasure, whom he had served with fidelity, courage, and resolution, in the most hazardous, difficult, and important undertakings. Mr. Hume denies that there were any grounds for the impeachment of lord Cromwell of treason, but admits that he justly merited his fate, for sulliying himself to be the instrument of the king's tyranny in the case of the countesses of Salisbury and others. "He was," adds the same historian, "a man of prudence, industry, and ability, worthy of a better master, and of a better fate." Mr. Gilpin, speaking of his condemnation, remarks, that among all the acts of expedition, laid up in the cabinets of princes, the readiest is to sacrifice a minister. The death of Cromwell was represented to the king as the best mean of composing the people. But though prudential reasons may oblige a prince to discard a minister, yet guilt only, and that nicely examined, can authorize an act of blood; the hand of a tyrant, however, generally throws aside the balance. It is a nice machine, and requires pains and temper to adjust it. The sword is an instrument more decisive, and of easier dispatch. Henry's was always stained with blood—often with innocent blood—but never with blood more innocent than that of Essex."—Boug. Brit.

CROMWELL, Oliver, one of the most distinguished characters in English history, who raised himself to supreme power, from an obscure situation, was son of Robert Cromwell and Elizabeth Stuart, his wife, and born at Huntington, on the 24th of April, 1599. At the free-school in this town he received the early part of his education, which he completed at Sidney college, Cambridge. His attainments in literature were by no means considerable; and he has been charged with exhibiting, in his youth, all the turbulence of temper which was compatible with a system of scholastic restraint. The death of his father called him home from Cambridge, and in a short time after he was entered at Lincoln's Inn, but, in the interval, the want of employment afforded him scope for indulgence in certain irregularities which gave his mother much uneasiness. In London he paid but little attention to the law, for the study of which he was intended, but giving into the vices of the town, he involved himself in expenses which the smallness of his fortune would ill support, and reduced him to difficulties. Still, however, he has the apology usually made, in like circumstances, for youth; as he married before he had attained to the age of twenty-one, the daughter of Sir James Bouchier, and from this period he began to lead a grave and sober life. By the death of his uncle, a few years after his marriage, he came in for an estate of nearly 500 l. per annum, which he had endeavoured to obtain before, by applying for a UAE. of lunacy against his relation. Previous to this, he had been returned member of parliament for the borough of Huntington; but, on coming to his fortune, he removed to the Isle of Wight, neglected the church, in which he had been educated, and openly joined himself to the Puritans. In 1638, he was elected member of parliament, and was shortly after appointed on the committee of religion, in which he distinguished himself by his zeal against popery, and by complaining of the bishop of Winchester's licensing books of a very dangerous tendency. During the recess from public business, he associated much with the ministers who had been silenced, and visited
invited them to perform religious services at his own house. By the support which he gave to their cause, and by his readiness to perform services of piety, of that which he had formerly gained by gambling, his affairs became again very much embarrassed. In the hope of adding to his income by honest industry, he took a farm at St. Ives, which he held about five years, without experiencing those gains which he had anticipated. Unconsciously at his present embarrassed situation, he formed the object of embarking for the Western world, in which he would probably have put into execution, had he not been prevented by a proclamation against emigration. He now appeared in various useful concerns as a man of business, and was regarded by his friends as one destined for matters of higher import than fall to the lot of the gentlemen of mankind. Oliver was elected member of the Long Parliament, for Cambridge, in the year 1642. From this event his future greatness is to be dated. In the house he was zealous and industrious, and a very frequent speaker, which gave him a considerable degree of influence, though he was deemed inconstant in his manners, and in his person he was remarkable slovenly and careless as to his dress. In 1643, he was the most active person in carrying the Remonstrance, which was, in fact, the basis of the civil war, and which was gained by a majority of nine only. This remonstrance, of which we shall have occasion to speak more at large under the article England, contained a concise history of the enormities of Charles's government, the evil counsellors who had guided and did guide him, and the mischiefs which they had been meditating against the house itself, for their opposition to, and correction of, shaks. It occasioned a debate that lasted from noon till ten o'clock the next morning, which had led some historians to compare the decision to the verdict of a half-avered jury: it was, however, of so much importance to the cause of the opposition, that many from this time, who had been wavering in their policies, gave a decided voice against the measures of the court, and it dispowered such as adhered to the king so powerfully, that, from this period, they ventured to make no resistance. Cromwell's firmness on the occasion, contrary to the wishes of many leading men on the same side, who were willing to put off the discussion, was the principal cause of success, and he recommended him to Hampden, Pryn, and others of the same party, that, from henceforward, they admitted him into all their councils. Naturally of a cool and penetrating mind, he soon obtained an insight into every subject that was deemed of importance at the time, and so perfect a knowledge of his contemporaries and of all their designs, that he was not only able to manage when they were removed, but even to contrive the means of diminishing those, who, at this crisis, looked upon themselves as his superiors.

In the beginning of 1643, when parliament had determined upon the levy of forces, he went to Cambridge, where he raised a troop of horse, of which he took the command by a commission from the earl of Essex. Though subject to a higher authority, he engaged, of his own accord, in some spirited enterprises, which were very beneficial to his party. The celebrity that he acquired as a soldier laid the foundation of the greatness to which he afterwards attained as the ruler of the country. His successes enabled him to increase his force, and he found himself in a very short time colonel at the head of a thousand well-disciplined horse-soldiers. Cromwell uniformly selected persons of religious principle, who felt a zeal for the businesses in which they engaged, rightly judging that men of abandoned characters are never, on trying occasions, to be trusted. His levies confided of his countrymen, substantial yeomanry, and their sons, whom he trained in excellent discipline, and rendered valiant by example and intimation. Cromwell has often been charged with hypocrisy, and where dissimulation answered his ends, he doubtless made no hesitation in calling it in to his aid; but in this business he adopted the line of manliness and true courage: in addressing his men, he said, 'I did not mean to deceive them, by pretending to fight for king and parliament, for should the king himself be found in the opposite army, he would as soon fire his pistol upon him as upon another man.'

Without attempting to trace the detail of Cromwell's military transactions, which will be given hereafter, we may observe that by various important services he acquired the complete confidence of parliament, and was in the year 1643-4 made lieutenant-general of the horse in the army of the Duke of Mancheiter, and in the battle of Marston-moor, July 3, 1644, his cavalry turned the fortune of the day, and gave the first blow to the royal party. He next distinguished himself at the battle of Newbury, in which his valour was so conspicuous, and the effect arising from it so very important, that he was hailed by his party as the 'Saviour of the Nation.' By the intercession of the wife, his motives were suspected; and his conduct was impeached in the house of lords as worthy of particular notice. He, on the other hand, exhibited charges of considerable moment against some members of the upper house. These accusations led to the carrying of the 'self-denying ordinance,' the professed object of which was to exclude the members of both houses from commands in the army. By this measure the earl of Mancheiter, the principal enemy to Cromwell, and other persons of rank and consequence, were excluded from offices in the army: from which, however, on the score of his extraordinary merit, that set him above all ordinances, Cromwell was at first occasionally, and at length absolutely exempted. The chief command of the army was now committed to Sir Thomas Fairfax, a man of undoubted bravery, and unimpeachable integrity, but unfit to cope with Cromwell, who was lieutenant-general of the army. On the 17th of June, 1645, he distinguished himself by the most brilliant exploits in the battle of Nafby. On that occasion he had the command of the right wing, and after Ireton had been beaten, and rashly pursued out of the field by prince Rupert, it was Cromwell's charge which broke the king's infantry, and secured a complete victory. He followed up the success of the day with other actions of high merit, and was rewarded by parliament with 2500l. per annum. and when he returned his flag in the house, thanks were returned to him in the warmest expressions, which he received with an affected humility, and declarations of profound submission to the will of that assembly. Those who, in parliament, had excited the war, for the sake of redressing grievances, and to set some bounds to the prerogative, were now diffident of peace, to which they conceived nothing would so much contribute, as having the king's person in their hands. For this purpose Sir Thomas Fairfax was ordered to besiege Oxford: the king however contrived to escape, and put himself into the hands of the Scots, who, at length, clandestinely gave him up on condition of receiving a lipulated sum of money. Parliament, having thus attained their object, was delirous of disbANDING a part of the army. Cromwell, whole overgrown authority this measure was meant to check, contrived to turn it to his own advantage; and procured from the general regulation an exception for Fairfax's army, which was in fact his own. From this period, the ways of Cromwell were directed by a policy very difficult to unravel. Ambition was doubtless the passion that had fattened on his mind: he fought for power, and
was earnest as to the means of asaining his object. He professed principles of deference and respect for the parliament, which he probably held in contempt: under the mask of friendship for the fallen monarch he was plotting against his life. By his instigation, the king's person was seized by Comte Joyce, who had no orders but the verbal instructions of Cromwell for what he did. When Charles was taken to head-quarters, the behaviour of the lieutenant-general was so respectful, that it was thought he meant to restore him to his lost crown; he obtained a letter from the army to parliament to declare that their cause and that of the king was the same. By the arts of Cromwell, the king left Hampton Court, where he seemed to be gaining importance, and put himself into the hands of the governor of the Isle of Wight, a pillion devoted to the interests of Cromwell. A second civil war in defence of monarchy called him again into the field: he marched into Wales, quelled an insurrection there; from thence he marched into Scotland, put the power into the hands of the other party, and made arrangements conformably to his own wishes, and then returned to London. In the mean time parliament opened a treaty with the king, which might have been concluded, had not Cromwell interfered: a detachment of the army seized the king's person, and lodged him in Hurst castle, which was at first refented by the parliament, who commanded the general to recall his orders; but instead of this, a part of the army marched directly to London, took possession of it, purged the house of commons of the best part of its members, and obliged the remainder to do what they pleased. The fate of the king was now drawing near, and it must be admitted that Oliver Cromwell was the prime mover in the cruel and bloody deed. He acted the hypocrite, and would willingly have kept through the whole business, in the back ground; but finding that his own energy was requisite to accomplish it, he came forward in the most public manner; he sat in the court, signed the warrant, and probably procured not only the execution, but the executioner, whose name and character have never yet been fully ascertained.

The constitution of the country was now destroyed, and in the hand of one sovereign, there were nominally many, under the name of a Council of State, but Cromwell, who formed it, was the principal member. The spirit of the army, which he had fostered for his own purposes, seemed to rise against him: a mutiny broke out, which, however, by his vigilance and resolution, was quelled without much fcorous mischief. He was next called to Ireland, where three parties were opposed to each other, viz. the native catholics, the royalists, and the friends to the parliament. He went out in 1649 in quality of lord lieutenant, with ample powers, and with a full determination of reducing all to order. Here he practised the utmost rigour of the law of arms, and murdered a multitude of people who opposed his projects, under the wilder title of military execution, a phrase, which by others, as well as Cromwell, has been used to justify the most savage outrages against humanity. At Drogheda he is said to have given up to the sword more than 2000 veteran troops: and at Wexford, women and children did not escape his fury. By these means he reduced Ireland to obedience, and returned to London in the following spring, where he was received by the thoughtless multitude with the most triumphant exultation.

Soon after his return, it was discovered that the Scotch had invaded Charles II., and were preparing an army in his support. Cromwell recommended a previous invasion of Scotland, and was himself appointed general commander in chief of all the forces of the commonwealth, still keeping the lieutenancy of Ireland. Cromwell marched to Scotland at the head of 20,000 chosen troops, a still larger army was raised to oppose him, which in the first contest were proved to be unequal to contend with the invaders. The battle of Dunbar, fought Sept. 3, 1650, terminated in a complete victory over the Scots, with great slaughter. Edinburgh castle fell in consequence of this decisive blow, and Cromwell seized various other important successe. In the mean time, Charles determined upon trying the strength and attachment of his friends in England. Cromwell followed him, and at Worcester on the 3d of September 1651, he obtained over the royal army what he denominated his "crowning victory," attended with the total destruction of his opponents. He now proceeded to London, where he was hailed with all the honours due to a conqueror and deliverer of his country. He was met by the parliament and its speaker, the council of state, and the magistrates of the city, who were assembled to render him the praise due to his successful labours. A day of thanksgiving was appointed, and Cromwell himself was rewarded with 40,000 a year, taken from the forfeited estates. From this period he began to concert measures for securing to himself the supreme power. The Long Parliament had become exceedingly unpopular in the country; they had long talked of dissolving themselves, but had always found pretexts for putting off the time to a more convenient opportunity. Cromwell took advantage of the odium which attached to an assembly that appeared determined to maintain the powers originally delegated to them for their country's good, with a view to the feudal purposes of self-interest. He resolved upon a decisive measure: he founded his friends, and talked to them of "establishing the kingdom," a phrase made use of to cover his real designs. He was well acquainted with human nature, and in every instance, he contrived to make per sons of different views, and almost opposite habits, suppose that their intentions, as to the remedy of evils, coincided with his own. To the sober and religious, he complained of the licentious lives, and dissolute manners, of certain leading republican members. He exposed the pride of some, the fraud of others, and the interreledness of all, except those to whom he was immediately addressing himself. With the fifth-monarchy men, he conversed in their own style, professing a desire that the saints should reign; but his real design he kept profoundly locked in his bosom; so that all who were desirous of a change, were willing to aid him in his efforts, upon the full persuasion that it would be such a change as they themselves wished. Having thus prepared the way, on the 19th of April 1653, he called a council of officers, explained his designs, took a party of 300 soldiers, whom he placed about the avenues to the parliament-house, and entered himself, as a spectator of their proceedings. They were debating the necessity of continuing as a house till the November of the following year. Displeased with their arguments, he called major general Harrison, and told him that he thought this was the proper moment for a dissolution. Harrison urged upon him the danger of the business; as if satisfied with his reasons, he remained quiet a few minutes, till the very moment when the speaker was about to put the question for palling the act of continuing their duration, he then started up, and bade the speaker to proceed at his peril: he commanded him to leave the chair, and told the house in a vehemence tone that they had existed long enough, for the good they had performed. He then addressed individuals, charging them with vices which they probably could not deny, and for which they had no expectation of being called to account. A few of them attempted to reply; but his object was not de-
bated, but decisively. "Come, come," said he, "I will put an end to your prating.—You are no longer a parliament; I lay you are not a parliament;" and flapping with his foot, he bade them all flame begone, and give place to housemen. The soldiers instantly entered the house, one of whom he commanded to "take away the bubble," meaning the mace. An officer, at the same time, took the speaker by the arm, and led him down from his seat. After which, with a degree of canting hypocrisy that never was surpassed, he addressed the house, saying, "It is you that have forced me upon this business, for I fought the Lord night and day, that he would rather stay me than put me upon the doing this work." To conclude the scene, he feized the books and papers, turned the members out of the house, and locked the doors. His next step was to dissolve the council of state, after which for a few days he governed by his own authority, calling to his aid a council of officers. Shortly after a new representative body was summoned consisting of 142 members, who from their numbers were styled the Little, from their manners the Godly, and from the name of one of its members, "Barebone's parliament." This body was found unequal to the charge which they had undertaken; the greater part from a sense of weakness resigned their power into the hands of Cromwell, and the rest he forcibly dismissed. The irremovable power again devolved upon the officers, who conferred upon Cromwell the office of Protector of the Commonwealth of England, Scotland, and Ireland. This happened Dec. 30, 1653, and he was solemnly invested with the high trust in Westminster-hall, and from this time he must be considered as the sovereign of a great nation; his power was almost boundless, but he exerted it with prudence and dignity. He applied himself to state affairs, made peace with Holland, and entered into treaties with Denmark, Sweden, and Portugal. France and Spain appeared ambitious of his friendship, and the general state of Europe was such as to give to England a large share of consequence among surrounding nations. In his domestic administration, he was an enemy to religious persecution; and shewed a respect for the rights of conscience. He displayed a zeal for justice, but was extremely severe in punishing conspiracies against the state, as he denominated those which were levied against him. He summoned a parliament, in which Scotland and Ireland were united in fending representatives, and obtained by this method a supply of money necessary for the carrying on of government. This body was not sufficiently obsequious to his will, and he dismissed it in about five or six months. In 1655 an insurrection broke out in the west of England, but Cromwell was too well informed of all the proceedings to feel any anxiety on this head; his numerous spies, and no monarch had more, gave him constant intelligence of every thing that passed, and he suffered the mal-content to proceed far enough to involve themselves in the penalties of treason, and then crushed them with a blow. Economy and frugality were not characteristics of Cromwell's reign, and the want of money led him to the seizure of property belonging to the king of Spain, which excited a war chiefly carried on in the West Indies. In that quarter the result was not highly favourable to the English, unless in the subjection of Jamaica, which has continued ever since attached to this country. But the successes of admiral Blake in the Mediterranean gave great importance to the protector's government, and raised him high in the opinion of foreigners. France was glad of an alliance, upon the condition of banishing the Stuart family from her realms, and giving up Dunkirk to England; and a splendid embassy from Sweden was sent and received with great parade. After the dissolution of parliament, Cromwell's government might fairly be termed the period of a despotism, for the money was raised by his own decrees without the intervention of the people. He issued, among other mandates, one for inflicting the penalty of the tenth of the annual income upon all the men who had borne arms for the king, and consoula artificially were sent into the several counties to levy the same; who were empowered to compound for the same on the terms of a three years' purchase. Such in those days were the penalties of high treason.

In the year 1656, Cromwell recurred to another parliament in order to obtain the necessary pecuniary supplies; after he had obtained these he aimed atextorting from them the title of king, but his expectations not being answered, he contented himself with that of protector; he then attempted to form a new house of peers, but the ancient nobility refused to associate with the sons of the protector, and others whom he was anxious to raise to a similar rank. About this period a pamphlet was written and circulated, entitled "Killing no Murder," inflicting upon the right of tyrannicide; this work, which was the production of Titus, an officer in the army, made so deep an impression on the mind of Cromwell, that he probably never enjoyed any hour's repose after the publication. New conspirators were discovered, and many suffered, some in consequence of projects discovered before they could be attempted, and others to avert the fears of the usurper. Among these were Sir Henry Singly, and Dr. Hewett, a clergyman of the church of England; for the latter every interdict was made, particularly by the protector's favourite daughter, but the irrevocable sentence was passed and carried into execution. She fell sick, and with almost her last breath executed the cruel policy that took away the life of her friend. From this time the health of the protector began visibly to decline; the cares and the fears, connected with his greatness, were doomed to bring him to a speedy end. A flux fever terminated his existence September 3, 1658. He does not appear to have expected this termination of the disease; he maintained, in opposition to the opinions of his physicians, the certainty of his recovery; but took the precaution to make his will, in which he bequeathed the reins of government to his son Richard, and to Henry his other son he left the governorship of Ireland. He was interred with great pomp in Westminster Abbey. He died at a period when, according to the opinion of bishop Burnet, "his life and his arts were exhausted together, so that if he had lived any longer, he would scarcely have been able to preserve his power." The fabric of his greatness was failed and unfound. By cunning and deceit he had attained his high situation; these seemed to render him the less amiable the longer he lived, and it is probable that in a very few years, or even months, they might have served him no more. His own children are said to have been all foes to his government, either traitors or republicans from principle; and, perhaps, says one of his biographers, "there was not a person in the nation sincerely attached to, and a well-wisher of his government." It was in vain to look for a disinterested account of the character of this great man, for, in the common acceptance of the word, he unqualifiedly was, among those who were the witnesses of his life and conduct. No two writers in the present age seem agreed as to the degree of merit or demerit to which he is entitled. We shall, however, quote the opinion of Mr. Granger, who has indeed drawn different sketches of him. "Oliver Cromwell," says he, "united in a very high degree, the characters of the politician and general, and occasionally shewed those of the orator and orator. He broke forth from his obscurity, at an age when others think themselves doomed to it for ever; and
when many begin to entertain thoughts of retiring from the world, he began to make the most conspicuous part in it. He availed himself of the virtues and vices, the talents and weaknesses, of mankind; and such obstructions as would have been insurmountable to an inferior genius, helped greatly to carry him on in his career."—"He is," says the same writer, "an amazing instance of what ambition, heated by enthusiasm, restrained by judgment, disguised by hypocrisy, and aided by natural vigour of mind, can do. He was never opposed with the weight, or perplexed with the intricacy of affairs; but his deep penetration, indefatigable activity, and invincible resolution, seemed to render him master of all events. He pursued without eloquence; and excelled obedience, more from the terror of his name, than the vigour of his administration. He appeared as a powerful instrument in the hand of Providence, and dared to appeal to the decrees of heaven for the justice of his cause. He knew every man in the three kingdoms, and endeavoured to avail himself of their respective talents. He has always been regarded by foreigners, and of late by the generality of his countrymen, as the greatest man this nation ever produced. It has been disputed which he most deserved, a halter or a crown, and there is no lack of impartiality between the characters drawn of him, and the reports propagated by his enemies and his friends." Biog. Brit. Harris's Life of Cromwell, &c.

CROMWELL, Richard, eldest son of the protector, was born at Huntingdon, in 1616, where he received his grammar learning. When he was about 20 years of age, he was entered at Lincoln's Inn, being probably intended for the bar, but he was too much attached to his pleasures to make any considerable progress in his legal studies. Neither in this, nor in any period of life, had he the ambition to distinguish himself. His political opinions were opposite to those of his father, and he had not the smallest taste for military distinction. It is said that he placed, on his knees, for the life of Charles, and it is well ascertained that he joined the party who wished success to the cause to which his father was the most formidable enemy. By the protector he was raised to some offices of distinction, and was one of his new peers. Richard rather acquiesced in his fate, than felt proud of the honour which he then enjoyed, and which, as the heir of Oliver, he might reasonably anticipate. Upon the death of his father, he succeeded to the government, and received the accustomed homage, with addresses from all parts of the nation. His title and claim were acknowledged by continental powers, and, for a few months, every thing went on very smoothly. A parliament was then called, which, though called in the usual manner, exhibited some alarming symptoms of opposition; disaffection appeared also in the army. In this existence, Richard advised with his privy council, who recommended a dissolution of the parliament, with which he complied, and this act may be considered as the real termination of his power. He retained, indeed, the name and the appearance of protector a few days longer, though without any degree of authority, and his reign was finally ended by the resolution of the council of officers to invite the surviving members of the Long Parliament, to return to the exercise and discharge of their trust. By some of his friends Richard was advised to retain his power by force, and to cut off those men who were aiming to deprive him of his regency; but he espoused their counsel, and spurned the thought of retaining power at the expense of blood. He quietly submitted to all the sacrifices that were required, and was particularly anxious that he might be freed from the debts which the splendour of his father's funeral seemed to fix upon him. Parliament gave him security for this purpose, and promised a liberal provision for himself and family. At the restoration he thought it right to retire to the continent, though there seems to have been no intention on the part of the king or his ministers to molest him; and so completely was he forgotten, that his name was not once mentioned in either house. For some years he resided at Paris, under a feigned name, and in great obscurity; from thence he went to Geneva, and about the year 1680 he returned to England, and fixed his residence at Theobald in Hertfordshire, under the name of Clark, where he lived much respected by those who enjoyed his acquaintance. He died in the year 1712, in his 86th year, a happier and a better man than his father, but possessed of none of those qualities that attract notice or lead to celebrity. He is described as an excellent character, possessing in his latter years great gravity and real piety. He was endowed with many amiable qualifications, and was much beloved by his friends, with some of whom he kept up a correspondence to his death. He had been married, and left three daughters, who some years before their father's death had attempted to deprive him of his property; by an appeal to the law, he obtained his right, and was afterwards reconciled to his children, whom in his last moments he recommended to "live in love, as he was going to the God of love." Biog. Brit.

CROMWELL, Henry, the youngest surviving son of Oliver, was born in January 1627-8, and at the age of 16 was introduced to military service. In 1639, he accompanied his father to Ireland, where he attained the rank of colonel. He returned, and was elected member of the "Barclay's Parliament," but was afterwards sent to Ireland in a political capacity, and at length was lord-lieutenant of that kingdom. In every situation he exhibited his part with honour, and was generally respected. Such indeed was the integrity of his character, that in a letter to his brother, he said, "I will rather submit to any sufferings with a good name, than be the greatest man upon earth without it." Upon the restoration of Charles, he lived quietly as a private gentleman, and took no part in the various changes of the state. It is thought that he rejoiced in the succession of the king to his crown, and that he was not only included in the act of indemnity, but received some marks of favour from the king, of which he expressed a very grateful sense, in a letter to lord Clarendon, through whose intervention the benefit was obtained. He died in the 47th year of his age, and was buried near his mother. After the restoration he returned to the church of England, and died in that communion. Many are the testimonies to the excellence of his character; we shall only notice that of Mr. Neal, who says, "that he was a wife and discreet governor: that by his prudent conduct he kept the Irish in awe; that he brought that nation into a flourishing condition; and that he behaved with such generous impartiality, as gained him the esteem even of the Royalists themselves." Biog. Brit.

CROMYON, in Ancient Geography, a borough of Corinth, situated on the gulf to the call of Ptolemais. It is pretended that it took its name from Crumum, the son of Neptum. In the full times of Greece, this was the place where the mercer of cruelty, called Sinis, fastened the limbs and arms of travellers whom he apprehended to branches of the purple tree, which he beat to the ground; and then giving them liberty to restore themselves, he thus tore to pieces the unfortunate wretches, whom the savage monster desired to this kind of death. Pausanias mentions the fact, and says that these cruelties were practised towards the point of the
the Hlmus. Here was an altar of Melicertes. When Ino
his mother plunged herself with him into the sea in
order to preserve him from the cruelty of his father, the
tale tells how Aphrodite brought her to the shore, and that
Sisyphus finding the body, interred it in this place, and
instituted in honour of her the Hlmus games.

CRONACA, SIMONE, in Biograpy, a Florentine archi-
tect, born in the year 1454. He travelled to Rome and
other cities of Italy to study and take exact measuremenl
of the antique edifices. Returning to Florence he acquired
considerable reputation, and was employed to finish the
Palazzo Strozzi, begun by Benedetto da Maiano. Amongst
his other works at Florence are the "Sagresty of the
Church of Santo Spirito, and the Church of S. Francesco dol' Osser-
sanza," at S. Miniato, in the suburbs of that city. He died
in 1599, and was buried in the church of St. Ambrogio.
Valari.

CRONACH, in Geography. See CRANACH.

CRONBURG. See CRONBAGE.

CRONE, in Rural Economy, a term applied to sheep,
which accords an old ewe. Thus in speaking of the aged
 flock of this sort, they are usually denominated crones.

It is rated by the author of the Farmer's Calendar as
a common system of management in included districts, to buy
in old crones in the month of September, to put the ram to
them in the following month, and to dipole of the lambs as
they become fat in the ensuing summer and autumn, so as
to clear the whole within, or at most in about a year from
the period of buying them in.

And this is supposed a tolerable method of management
in cafes where the fences are in a perfectly secure condition,
and the food in great abundance, though in general in-
ferior to the system of wether lambs. See SHEEP.

Cron flock is, however, confidered by the author of the
Minutes of Agriculture as a very unprofitable sort, especially
where the chief feeding food is turnips, as they are not, from
their want of teeth, capable of breaking them in a manner so
to go on well with such kinds of food.

CRONE, or KORONOW, in Geography, a town of Prussia,
in Pomerelia; 56 miles south of Dantzig.

CRONEBANE, a mountain in the county of Wicklow,
Ireland, rising about 1000 feet above the level of the sea,
which, with Ballymacellig, is noted for its copper mines.
The chief line of the metalliciferous vein extends from the
hill of Cronbanch to that of Croaghban, nearly ten miles in
length. The former of these mines is wrought by a char-
tered company with much scientific art. The species of ore
which is found here is the most common of copper ores,
called copper pyrites. Copper water, or water in which
sulphur of copper is dissolved, is found in these mines, and
it is accounted one of the strangest in Europe. Its strength
however depends upon the quality of the copper. The at-
tention of the traveller will be repaid by an investigation of
the processes by which this water deposits almost pure copper ore.
The ore is fused at Arklow, but afterwards farther refined at
Swansea or Neath, in South Wales. The ground around these
mines was lately bog and rock, but by the exertions of
captain Mills and Mr. Weaver, its appearance is now al-
terred, and it produces excellent crops. These mines are
situated between Rothdrum and Arklow, about 23 miles
south from Dublin. Robertson's Guide.

CRONEBORG, or Tvaatshus, in Latin Cronbogr-
gum, a small town of Swedish Finland, chief place of
the province of Tvaatjand, on a river that runs into the
lake of Vaxa; 63 miles north-west of Borgo; 75 north-
east of Abo. It was built in the year 1650, in a pleasant
situation, by count Peter Brate, and favoured with con-
derable privileges. In 1717, it was taken by the Russians
and has always flourished considerably during the wars be-
 tween the Russians and the Swedes. Cronbog has the
hundredth vote in the Swedish diet. The castle, which is
very strong, ought to be exclusively denominated Tavalde-
burg or Tavaldeborough. It is used as an arsenal and military
magazine. When the Russians invaded Finland in the lat-
er end of February 1808, the Swedes retired under the
walls of this castle, and took a concentrated position in its
neighbourhood.

CRONENBOURG, a small town of France, in the de-
partment of the Oulte, chief place of a canton, in the dis-
 trict of Malmédy, with a population of 650 individuals.
The canton has five communes, and 2454 inhabitants, upon
a territorial extent of 135 kilometres.

CRONENBURG, or CRONBAGE. A strong castle of Den-
mark, in the island of Zealand, on the west coast of the
Sound, near the town of Elfinneur, built by Frederick II. in
1379, for the purpose of defending the entrance of the Sound,
which is only 1331 fathoms wide opposite the cast e. It is
constructed with large blocks of hewn stone, and adorned
with several turrets. The fortifications are reckoned ex-
cellent. However, the guns of this castle could not pre-
vent the passage of the English fleet under admirals Par-
kert and Nelson, in March 1801. Every vessel in passing
lowered her top-sails, and pays a toll at Elfinneur. This for-
tress, it is generally said, guards the Sound; and all ships
are obliged, on account of hool and currents, to lie near
the batteries as to be exposed to their fire, in case of
refusal. This notion, however, is erroneous: although the
defense of the Sound lies near the fortresses, the water in any part
is sufficiently deep for vessels to keep at a distance from the
batteries, and the largest ships can fail close to the coast of Sweden.
The constant discharge of the toll is owing, not to much to the strength of the fortresses as to a compliance
with the public law of Europe. Many disputes have arisen concerning the right which the crown of Denmark has to im-
pose this duty. The Swedes were for some time exempted by treaty; but, in 1720, Frederick I. agreed that Swedish
vessels should be subject to the usual imposts. All vessels,
besides a small duty, are rated at 15 per cent, of their carg-
ous, except the English, French, Dutch, and Swedish,
which pay only one per cent.; in return, the crown takes
the charge of constructing light-houses, and erecting sig-
als to mark the shoals and rocks, from the Cattegic
to the entrance of the Baltic. The tolls of the Sound,
and of the two Belts, supply an annual revenue of about
100,000.

It was in the palace which stands in this fortress that the
unfortunate queen Carolina Matilda of Denmark, after taking
George III. of England, was confined in 1772; from hence
she was removed to Zell, where she died of a fever. This
palace is a square Gothic building of free-stone.
From an inscription over the gate, it appears that it was
begun by Frederick III. and has been repaired and augmented
by succeeding sovereigns. It contains two good portraits
of Frederick II. and Christian IV, and several battle-pieces
representing the wars of Christian V.

Adjoining to another royal palace, about half a mile from
Cronbog, is "Hamlet's garden," which tradition reports to be
the identical spot where the murder of his father was
perpetrated.

CRONICAL, in Astronomy. See ACRONICAL.

CRONION, in Ancient Geography. See CROMONA.

CRONIONMARE, a northern sea, which, according to
Ptol. was one day's sail beyond Thulé. It is called "Mare
G 2
Pigmen."

1756.
The very Narcissus, province of the great that baiting very small member of this the Ancient which has fortifications their issue town. In is English small 1722. the direct beginning "Pigrum". A lifeless region, in ancient Geography, a mountain of Greece, in the Peloponnesus. Dionysus of Heliocarnassus places it before Alpheus, in the territory of the town of Pyke. CRONOBURG, in Geography, a small town of Sweden, in the province of Smoland, on an inconsiderable island in the Hodge lake, which formerly had a very fine cable, the ruins of which are still seen. It was built in 1022, by St. Siegfried, the first preacher of the gospel in those parts, and given to the bishop of Wexir, for which reason it was called Bishop's-berg or Bishop's hill. But in the year 1545, it was enlarged and walled in by king Gustavus I., when its name was changed into that of Cronoberg, Crown's hill.

CRONSCWITZ, a town of Germany, in the circle of Upper Saxony, and territory of Neustadt; two miles northeast of Werda.

CRONSLOT, or KRONESSLÖS, Crown Carlo, is a fort built in the year 1703 by Peter the Great of Russia, on a small island in the gulf of Cronstadt opposite the fort of St. Alexander. It defends the only passage through which ships of battle can sail from the gulf of Finland to Petersburg; its fortifications project into the water; it mounts several batteries, and generally has a garrison of 100 men.

CRONSTADT, or KRONESTADT, a port town in the northern division of Russia, in the government of Petersburg, built by Peter the Great in 1712, on the island Retzfari, called by the Russians Kelali, or Kadinen Oifrost, the kettle island, but since the year 1713 better known by the name of Cronstadt. It lies 30 versts west-north-west of Petersburg, at the eastern extremity of the gulf of Finland, which, from this side to Petersburg, is denominated the gulf of Cronstadt. It is not more than eight fathoms above the level of the water, rather flat, about seven versts long and one broad; has some wood, chiefly birch; and its soil is clay, sand, and limestone. At the eastern extremity of the island is the town of Cronstadt. Near it on the south side are two small fortified islands called St. Alexander and Cronlot. There is a third island on the northern side of the channel smaller than either, named St. John.

Ships of war, frigates, and merchant vessels, whose masts exhibit a huge impervious forest; fortifications of granite projecting into the water, and spacious and lofty magazines give to the harbour of Cronstadt a magnificent appearance at a distance; but the town itself answers not the expectations which this appearance excites. There are but few good houses. It is a drabbling place, and like all Russian towns, occupies a larger space of ground than the number of habitations, which are mean and mostly of wood, items to require. There are three different harbours. That to the east, in which the greatest part of the Russian Baltic fleet is laid up, holds 25 large ships of war, but its sline is difficult, and the water being rather fresh, accelerates the wear of the vessels, and causes them to rot. The middle harbour is for frigates, sloops of war, and yachts belonging to the crown. The harbour to the west is appropriated to merchant ships, and may hold six hundred vessels. Close to it is the Peter's canal, which derives its name and its origin from Peter the Great, the immortal founder of Cronstadt. Two huge obelisks bear inscriptions commemorative of this great undertaking.

Dry-docks for the refitting of men of war were begun by Peter at Cronstadt, in the year 1719, but neglected under his successors, and not completed before the reign of his daughter Elizabeth. Ten ships may be put upon the blocks at the same time. The docks are provided with flood-gates for admitting and letting out the vessels, and the water is emptied into a vast basin of granite, from whence it is repumped into the docks by means of a large steam engine erected by the Carron company of Scotland in the year 1772. The length of these works from the beginning of Peter's canal to the last dock is 4201 feet. The decks are lined with stone and paved with granite. They are 40 feet deep, and 105 broad. There is also a foundery for casting cannon balls, and a rope-walk for cables of all sizes.

Another canal was completed soon after the death of Catharine II., by means of which vessels of all sizes are enabled to take in their loads at the very gates of the magazines built on both sides of the canal, which, like the Peter's canal, is lined with brick-work.

The marine hospital at Cronstadt is on a very extensive scale. In 1788 it had at different times 25,007 patients; in 1789, 16,093; of the former 20,024 were cured, of the latter 12,977.

The academy for cadets of the marine was removed towards the latter end of the reign of Catharine II. from Cronstadt to Oranienbaum, from whence the emperor Paul transferred it to the Vasilii Oifrost quarter at Petersburg.

The population of Cronstadt is estimated at 50,000 individuals; most of whom belong to the fleet, and to the garison.

The number of registered burghers does not exceed 300. The streets are thronged with mariners from all the ports of Europe. There is an English chapel, and a Lutheran church for the Germans.

Cronstadt, being seated on a small island, has no other communication with the adjacent country than by water. Bats are continually passing between Cronstadt and Oranienbaum, a distance of seven versts, which in full wind it requires an hour and a quarter to cross in one hour's rowing. Oranienbaum is only 23 versts W. of Petersburg. In winter there is a common carriage road from Petersburg to Cronstadt on the ice, down the river Neva in a direct line over the gulf of Cronstadt, marked out with fir branches, and by the side of it are several guard-houses and a half-way or bating booth. "Tooke's View of the Russian Empire." "Storch's Picture of St. Petersburg."—Alto, a handsome and populous town of Austria, in Transylvania, near the frontiers of Moldavia, 60 miles E. of Hermannstadt, and next in rank to that place. It has three large suburbs, and was anciently called Brafft, Braffo, Draffo. Alto, a caffle in Sweden, erected in the year 1718, near the small town of Prolan in the southern part of the province of Jamtland.

CRONSTADT, the gulf of, is that part of the gulf of Finland in the Baltic sea which extends from the island and town of Cronstadt to the mouth of the river Neva, or rather to St. Petersburg itself. See the preceding article.

CRONSTADT, AXEL FREDERICK, in Biography, a celebrated mineralogist, was born at Sudermania in 1722. From a very early period he showed a great attachment to the studies of natural history; and as he advanced in life he received several appointments from the government of Sweden, connected with the mines of that country. In 1753 he was elected a member of the royal academy of sciences at Stock...
Stockholm; and in 1735 made a tour to Norway, to inspect the mines there. The greater part of his life was spent among the mines, the management of which fell chiefly on him. He died Aug. 1756. His principal work was entitled “An attempt towards an Arrangement of Minerals, or of the different Substances of the Mineral Kingdom.” He published many papers on metallurgy, economy, &c. He was the first scientific writer on mineralogy, and was the inventor of most of those terms which have been since applied to the distinction of the external characters of mineral bodies. Gen. Bog.

CROOK, in Rural Economy, a term often provincially employed to signify a fort of strong iron hook, such as is in use for hanging field and other gates with. It is also sometimes applied to the crooked staff formerly made ufe of by the shepherd.

Crooks, a name applied in some districts, as Devonshire, to a fort of pack-horse furniture, by which various articles of the farm kind are conveyed on the back of the horse. It is a fort of contrivance which, according to the author of the rural economy, of the above county, varies with the nature of the load.

And it is remarked by the same writer that “hay, corn, straw, faggots, and other comparatively light articles of burden, are loaded between ‘crooks’ formed of willow poles about the thickness of ftythe-handles, and seven or eight feet long, bent as ox-bows, but with one end much longer than the other. Thicke are joined in pairs with light croisbars, eighteen inches to two feet long; and each horse is furnished with two pair of these crooks, flung together, so as that the shorter and stronger ends shall lie easy and firmly against the pack-faddle; the longer and lighter ends rising, perhaps, fifteen or more inches above the horse’s back, and standing four or five inches from each other. Within and between these crooks the load is piled, and bound fast together, with that simplity and dispatch which long practice seldom fails of striking out.

Cord-wood, large ftones, and other heavy articles, are carried between short crooks, made of four natural heads or knees, both ends being nearly of the same length; and in use the points standing nearly level with the ridge of the pack-faddle.

Dung, fand, materials of buildings, roads, &c. are carried in ‘pots’ or strong coarse panniers, flung together like the crooks; and, as panniers are usually flung, the dung, especially if long and light, being ridged up over the faddle.

The bottom of each pot is a falling door, on a strong and simple constriction. The place of delivery, being reached, the trap is unlatched, and the load released.

These are rude methods of conveying such sorts of materials which have continued in use long after the caufes which introduced them have ceased to exist; better modes are now beginning to be praeful.

Crooks are short tubes of brafs of different lengths, adapted to fit into the upper end of the tubes of French horns, trumpets, and trombones, and into their mouth-pieces, by which the instrument is lengthened or shortened at pleasure, in order to tune it to the pitch of the organ, or other instrument, with which it is to be used in concert, or for adapting it to perform in different keys.

CROOKED HAVEN, in Geography, a bay of Scotland, on the N. coast of the county of Banff, 24 miles N.W. of Cullen.

Crooked Island, one of the Bahamas, in the West Indies. In this island is a fingular excavation of the rocks, refiguring a dilapidated structure, and formed by the violent agitation and continued action of the breakers from the sea. For a minute description we refer to McKintie’s West Indies, p. 27.

Crooked Lake, a lake of America, in the Genevieve country, communicating in an E. by N. direction with Seneca lakes.—Also, one of the small chain of lakes which connects the lake of the Woods with Lake Superior, on the boundary line between the United States and Upper Canada, remarkable for its rugged cliffs, in the cracks of which are a number of arrows sticking.

Crooked River, a river of America, in the state of Georgia, and county of Camden, which discharges itself into the sea opposite to Cumberland island, 12 or 14 miles N. from the mouth of St. Mary’s. Its banks are well timbered, and its course is E. by N.

CROOKEDNESS. See Distortion.

CROOKHAVEN, in Geography, a small town, or rather village, of the county of Cork, Ireland, on a harbour of the same name. It is at the western extremity of the county, a few miles N.W. from Cape Clear. The harbour is narrow, but all good ground, well-ferried, and has water sufficient for large ships. It is a commodious place for vessels bound to the eastward. It is about 180 Irish miles S.W. from Dublin, and 3 east from Mizen Head. N. lat. 51° 25’. W. long. 9° 38’. McKenzie.

CROOKNEL, in Mineralogy, a miner’s term in Derbyshire, for a belly or wide place of ore in a vein. See Lum, Kidney, Nest.

CROOM, in Geography, a small post-town of the county of Limerick, Ireland, on the river Maught, 142 miles S.W. from Dublin, and 10 S. from Limerick.

CROONE, William, in Biography, a native of London, received his education at Emanuel college at Cambridge, of which he was admitted a fellow in the year 1654. His inclination leading to the practice of medicine, he soon after settled in London. In 1659 he was chosen rhetoric professor of Gresham college, and the following year regifter of the royal society, which held their meetings there. In 1662, he was created doctor in medicine, by mandate of the king, and the same year he was elected a fellow of the royal society, and of the college of physicians. In 1670 he was appointed lecturer in anatomy to the company of surgeons, in the place and on the recommendation of Sir Charles Scarborough. Dr. Croone had travelled some years over France, and other parts of Europe, and kept up a correspondence with many of the foreign literati. On his death, which happened on the 12th of October 1684, he left one hundred pounds to the company of surgeons. His books on medicine he gave to the college of physicians, those treating on mathematics to Emanuel college, to which college, and to six other colleges, he left the sum of 200 annually to each of them, to found lectures in mathematics, and to the college of physicians, and to the royal society, the profits to be derived from a house in Old Figh street, the King’s head tavern, for lectures to be read annually before those learned bodies, on muscular motion. The only publication by Dr. Croone is a small tract, “De ratione munita membrorum,” printed in London, 1664, 4to., though several papers were left on philosophical subjects. Ward’s Prof. fis of Gresham college.

CROOTES, in Mineralogy, a substance found about the ore in the lead-mines at Mendip, being a mealy, white, soft ftonc, matted with ore.

CROP, in Agriculture, a term signifying the quantity or produce of any sort of field crop, as of grain, pulse, roots, plants, grass, or any similar kinds, raised by the farmer on any portion of ground at one time. And from this diversity, they are likewise further distinguished into corn, root, and green crops, according to the circumstances of the case. The
The culture and utility of the two last forts have been greatly increased within these last few years, in consequence of their application, as cattle food, being more perfectly understood. It is indeed to this circumstance that much of the modern improvement in husbandry is owing, and from which a great deal of the increased profit of the farmer has been derived.

The nature of the different sorts of crops, and the methods of distributing them on different sorts of farms, will be fully considered in speaking of the counties of crops. See Crops, Course of.

Crop, in Gardening, a term denoting the produce or kind of any sort of vegetable, plant, fruit, feed, or root, which is raised or cultivated upon any bed, border, or other compartment of the kitchen garden. They are distinguished in many different ways, as into autumnal, winter, and spring crops, into early and late crops, and into seed or root crops, generally, as well as small and large crops. And there are likewise various sorts of fruit crops, both of large and small kinds, as well as various descriptions of forcing or frame crops. The proper management of these different kinds of crops constitutes a principal part of the art of gardening.

Crop, in Billing, denotes the upper part or covering of a stratum; thus, the roof of a coal-mine is sometimes called his crop.

CROPALATE, in Geography, a town of Naples, in the province of Calabria, 11 miles S.E. of Rosiano.

CROPANI, a town of Naples, in the province of Calabria Ultra: 9 miles E.N.E. of St. Severina.

CROPASSIA, a town of Naples, in the province of Calabria Citera: 7 miles W. of Umbratello.

CROPHERY, a village in Oxfordshire, in the hundred of Banbury, 3 miles N. of Banbury, and 78 N.W. of London; is situated on the Charwell river, and on the line of the Oxford canal, at a place where it was once proposed that the Stratford and Crophey canal should join this. (See Canal.)

In the year 1644, a battle was fought here between the forces of the king and those of the parliament, in which the latter were defeated.

CROPHI, in Ancient Geography, a mountain of Egypt, between Elephantina and Syene. The sources of the Nile, according to Herodotus, were between this mountain and that of Mophi.

CROPPER, or Dutch Cropper, in Ornithology, the name of a particular species of pigeon, called the columba guttata guttata Batavia, by Moore: the guttata, a variety of the Columba domestica, which feé. It is naturally thick, and has its name from its large crop, or bag of wind, which it carries under its beak, and can at pleasure either raise or depress. These are thick bodied, and flint; their legs are also thick and flint, and are feathered down to the feet: the crop is large and hangs low; the feathers on the thighs hang loose: and their legs broad and wide: they are gravel-eyed, and are generally very bad feeders.

There are of these pigeons of all colours, and those who are careful of them, generally take them away from their proper parent, while young, and breed them under the females of other species.

Crops, Course of, in Agriculture, denotes the means or methods of adapting and putting them in such a manner to the particular nature of the land or soil, as that they may render it the most abundant and productive, with the least possible degree of deterioration or exhaustion of its fertile properties. It has been well observed by a late writer that "the proper cropping of arable land is a matter of the utmost importance to the interests of the farmer, as upon it in a great measure must depend the profits and advantages which he is to derive from his labour and industry." It is conceived by Mr. Billing, an experienced agriculturalist, in the western part of the kingdom, to be this most prominent feature in good farming, and that by which the produce of the soil may be increased in a threefold proportion: and by another writer in a more southern district, as one of the most important subjects that can occupy the attention or exercise the ingenuity and skill of the agriculturalist. And Mr. Young, in his valuable calendar of husbandry, conceives it to be the most important subject that has been treated of by the modern writers of husbandry, and that on which they have thrown far more light than upon any other circumstance in agriculture. It is a very singular and remarkable circumstance, he says, that before the reign of his present majesty, notwithstanding the multitude of books on agriculture, there is not one author who had any tolerable ideas upon this subject, or even alluded to it any importance. They recite, he observes, courses good, bad, and excusable in the same tone, as matters not open to praise or censure, and unconnected with any principles that could throw light on the arrangement of field-crops. But that when the idea was properly started, its importance commenced, he, profly became obvious, to that thirty years have carried to great perfection the precepts which practice has afforded in this branch of rural economy.

And that it demands much regard by the cultivator is fully evinced, says a late writer, by the great advantages that have been gained by it since its principles have become more perfectly understood and more extensively applied. It has indeed been well remarked by the editor of the "Annals of Agriculture," that "wherever either very good or very bad husbandry is found on arable land, it results more from the right or wrong arrangement of the crops than from any other circumstance." And that "no district is well cultivated under bad rotations, while it is exceedingly rare to see any badly managed under good ones."

It may be observed farther that, in the arrangement of this business, as different sorts of plants or crops not only require different kinds and proportions of nutritious materials to be drawn from the earth for their increase and perfect growth, but also different situations and conditions of soil, it must be necessary to adapt them as much as possible to the peculiar qualities of the soil, as well as the state of the land, and the nature of the climate, in which it is placed; and as on the same principles some sorts of crops may exhaust or deteriorate the soils on which they grow, in much less proportions than others, which is well known to be the case with many kinds of what are termed green crops, when compared with those of the white or corn kind; it will be requisite to alternate or interpose them in such a manner as that the ground may sustain the least possible injury in that way. In addition to the above observations and directions; it may be observed be of great utility to attend to other circumstances, as those of introducing such sorts of green crops as are most suited by the shade of their leaves and the kind of culture which they require while growing, for keeping the ground clean from weeds, and in a mellow and suitable state for the reception of the more valuable kinds of grain crops, as in this way the necessity of having recourse to the uneconomical process of following, may be considerably lessened, if not wholly obviated. It has been shown by experience that all the culminating chief of plants injure the foil in a very high degree, which probably depends upon their having but few, and those small leaves; consequently being needful to draw their nourishment chiefly from the soil at all periods of their growth, but especially during the time of their maturing their seeds, when, from the dry withered state of their
their leaves, it is impossible that any thing can be drawn from the atmosphere. But they may be prejudicial in other ways, the seeds of their plants ripening all at the same time; on their beginning to ripen the plants become stationary, the roots ceasing to pull or penetrate into the ground, and of course to move or loosen it; and the withered leaves and fiddle-shaped stems being cut down, leave the land fully exposed to the action of the sun and winds, by which it becomes dry, hard, and compact, being greatly exhausted by the dissipation of its moisture and other properties, while opportunities are given for its being filled with weeds before the winter sets in. Of all the various sorts of clafs of plants, wheat, from its being the heaviest in its grain, is probably the most deteriorating in its effects on the soil, while the difference between barley and oats is but trivial in this respect; and rye is well known to be less prejudicial in this way than any of the other kinds.

In regard to the green, or what are frequently termed leguminous crops, and those of the root kind, it may be remarked that the former, from their seeds being formed in a fusiform manner, their flowers, with green and ripe fruit presenting themselves at the same time on different parts of the same plant, they continue, of course, in a state of growth, pushing their numerous fibrous or other roots deeply into the ground, while at the same time they derive much of their nourishment from the surrounding air, by means of their green leaves, till the very period at which they are cut down. It is probably on this account that the straw of some of the plants of this clafs is so much superior to that of the grain kind, as well as the great difference in the flat and condition of the land, the leguminous plants keeping the mould not only loofe, friable, and mellow for the plough in the way noticed above, but by their close thick flake, they preserve the moisture in the land in an effectual manner, and produce a fermentative procfs, by which means the vegetable matters which are covered, are speedily reduced, and the foil left in a rich, moist friable state.

Red or broad clover is very beneficial in this way, and when cut readily floated again, keeping the foil loose by its deep tap root, and when ultimately turned in, affords a large portion of vegetable matter to the foil; and besides it admits wheat to be sown on a single furrow, by which the great labour and expense of summer fallow is saved. This probably deferves the fifth place as an anchoring plant in cropping land.

And tares or vetches are in general considered as de-serv- ing the next place in the scale of improving crops. They have much similitude to the pea and bean in their habits of growth, but of letfs. There are different varieties or sorts of them, which serve the purpose of green cattle food at different seasons of the year, but in some cases are made into hay in the summer kind. They consequently contribute largely in this way, as well as by the clofenes of the flake which they afford, and the preservation of moisture to improve the foil.

Peas, when cultivated for the purpose of being cut green, as fodder, have similar effects to those of vetches in mero- rating the foil as well as most of the properties of clover upon it. But when they are suffered to ripen their seed, they become exhausting in a high degree, perhaps not very much less than grain.

The bean plant is found highly beneficial on the more light, heavy, clayey soils, bringing fresh foils of land into a state of preparation for wheat; but though, like other plants of the same clafs, they exhaust little, they do not shade the ground so perfectly as the crops which have been just mentioned, consequently do not preserve the moisture to com- plctely. Besides, from their being mostly suffered to ripen their seeds, they require manure. They are in general found more useful in breaking down and reducing clods than, and preventing the growth of weeds, than in improving the land on which they are raised.

Turnips and cabbages are plants which afford considerable shade by the number and size of their leaves, and their roots penetrate to a great depth in the foil. By the preparation of the ground, and the after culture which they require, the land is also rendered free, and kept free from weeds, by which it becomes in excellent condition for barley. When not confumed upon the ground, some deterioration is proba- bly produced by them, as they require rich foils and manure, to raise them with success. They are, however, crops which afford large supplies of food for cattle flock in the latter part of the autumn, the winter, and the early spring.

The culture of the potatoe is had recourse to with similar intentions in reducing the foils which, from the nature and fize of the root, is perhaps performed with more effect, and of course renders them in excellent order for barley, which is usually found to succeed better after them than wheat. They cause great c neighbourhoods and fule by which the moisture of the land is well preserved; but from the nature and fize of the roots, they are found to exhaust the ground in an equal degree even to wheat crops, and they require a large supply of manure.

Where the foils are suitable the carrot and parfup may be grown with vast advantage, as affording an abundant supply of the most nutritious foils of land for domestic animals. From the nature of their top roots and their fize, they prepare the land well for the crops which are to follow them. Under these crops, and those of clover, tares, cabbages, and potatoes, the fame quantity of land has been found to produce twice as much cattle food as when in the state of foils. There are several other plants that may be introduced in the course of cropping, under particular circumstances with much propriety and advantage, but it is not necessary to notice them here.

It has been remarked by Mr. Middleton, in his Agricultural Report of Middlesex, in speaking of green crops as a substit- tute for foils, that "the aggregate benefits that may be derived to the country from this measure are not to be es- timated, but among the first of these will stand the abolition of foils, and the introduction of green crops to supply their place over an extent of about three millions of acres of arable land, which have hitherto under the fallow system, produced nothing useful during the fallow year." Further that, "as far as tares and turnips or potatoes, or peas and turnips, or potatoes, or any two good crops, can be raised in one year, in place of a fallow, the produce will be double in quantity what it has been under the former system." And he adds that "there are about nine millions of acres in England and Wales in the course of two crops and a fallow; that is, fix in crop and three in fallow. Hence it follows that by growing one crop in lieu of the fallow, fifty per cent. is added to the former produce. But so far as two crops can be obtained in place of a fallow, it adds 100 per cent., or double the former number of acres of produce."

And that "as most foils of foils when continued for any great length of time either under grain or grasses are liable, it is remarked by another writer on this subject, to fullin in- jury, and become less capable of producing full crops; in the first cafe, probably from the carbonaceous principle being too greatly exhausted, and in the latter from the occurrence of moss or other noxious vegetable productions that establish themselves in consequence of the weak and imperfect growth of the grass plants; it may be proper to occasionally alter and change
C R O P S.

It is likewise stated by the author of "Practical Agriculture" that, "in regulating the courses of crops on all descriptions of land with the view of preventing their exhausting the soil, it will be necessary to guard against the occurrence of turnips, potatoes, or other crops of a similar kind, in succession, as the result of experiments attentively made, as well as the experience of the most correct agriculturists in different districts have decidedly shown their effects to be very powerful when employed in such a manner, in deteriorating and lessening the productive powers of the ground."

In the trials of Mr. Arthur Young, in respect to the effects of different sorts of crops on land, "which appear to have been conducted with a considerable degree of accuracy and attention, on a soil of the sandy loam kind, incumbent on a wet clay marl bottom, rendered dry by means of previous low draining, and of the annual value of about fifteen shillings the acre, broken up from the late of grass under which it had been for a great length of time, and ploughed into ridges in contrary directions; each succeeding year, no manure being applied except on particular lands or ridges in the fourth, though two or three white crops in succession were found to exhaust in a high degree, potatoes had a still greater effect in the same way, much more than barley in most cases, and in some courses even more than wheat." These experiments are fully recorded in the twenty third volume of the Annals of Agriculture; and more concisely below.

And it is added, that "the results are equally curi us and interesting, as they not only demonstrate the advantages that may arise from the alternation of different sorts of crops in different ways, but the effects of various rotations, both good and bad, upon the soil and produce derived from it. They would, however, if observed, have been more satisfactory, if the nature of the land had admitted the turnip and cabbage crops to have been confined upon the ground, as no certain conclusions can probably be drawn where this is not the case; for though a proportionate quantity of manure may be afterwards returned to the land, its application in that way does not seem to afford such beneficial effects as when gradually incorporated with the soil during the time the animals are feeding on it, upon such luxuriant vegetable substances. Besides the effects of the urine and perpiration, which are known to be of considerable utility in ameliorating the earth, are wholly lost." It is further suggested by this able writer, that tarax, clover, and other grasses of the artificial kinds, should likewise have been introduced, as by such kinds of crops, the courses would not only have been more varied, but the effects of different combinations more fully shown.

And the able experimenter further remarks, that, "all the work of tillage was performed by the common implements of the farm, and that the crops in the whole of the thirty-fix courses were reaped and threshed directly, distinct from each other, to obviate the danger of mixing and errors, and that they were measured accurately to save the trouble of calculation. In the valuation of the crop the straw is rated at 10s. an acre, and the crops are likewise eliminated, that the fluctuations of price may not affect the general conclusions; the turnips at 4s. a ton carted off, cabbages at 5s. wheat 2s., a bushel barley 2s. 6d., oats 2s. 3d., beans 3s., potatoes 6d., any other value may however, he says, be put upon them according to circumstances."

It is, however, added that, in order to afford a full and complete view of the effects of different courses of crops, it would be necessary to compare them on soils of different qualities, and which vary much in respect to their nature, climate, situation, and other circumstances. But even as they stand, the intelligent farmer may draw many useful deductions from them.

Course I.

<table>
<thead>
<tr>
<th>Crops</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Beans</td>
<td>3 qrs. 1 bushel</td>
<td>£4 15 0</td>
</tr>
<tr>
<td>2 Turnips</td>
<td>8 tons 0 cwt.</td>
<td>£1 13 0</td>
</tr>
<tr>
<td>3 Wheat</td>
<td>2 qrs. 5 bushels</td>
<td>£5 15 0</td>
</tr>
<tr>
<td>4 Potatoes</td>
<td>234 bushels</td>
<td>£5 17 0</td>
</tr>
<tr>
<td>5 Beans</td>
<td>3 qrs. 3 bushels</td>
<td>£7 5 0</td>
</tr>
</tbody>
</table>

Per annum £4 16 2

Course II.

<table>
<thead>
<tr>
<th>Crops</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Beans</td>
<td>3 qrs. 1 peck</td>
<td>£4 2 9</td>
</tr>
<tr>
<td>2 Cabbage</td>
<td>6½ tons</td>
<td>1 12 6</td>
</tr>
<tr>
<td>3 Wheat</td>
<td>2 qrs. 5 bushels</td>
<td>£5 15 0</td>
</tr>
<tr>
<td>4 Cabbage</td>
<td>7 tons</td>
<td>£1 15 0</td>
</tr>
<tr>
<td>5 Beans</td>
<td>3 qrs. 7 bushels</td>
<td>£5 3 0</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>3 qrs. 3 bushels</td>
<td>£7 5 0</td>
</tr>
</tbody>
</table>

Per annum £4 5 ½

Course III.

<table>
<thead>
<tr>
<th>Crops</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Beans</td>
<td>3 qrs. 1 bushel</td>
<td>£4 5 9</td>
</tr>
<tr>
<td>2 Potatoes</td>
<td>150 bushels</td>
<td>£3 15 0</td>
</tr>
<tr>
<td>3 Wheat</td>
<td>2 qrs. 2½ bushels</td>
<td>£5 2 6</td>
</tr>
<tr>
<td>4 Cabbage</td>
<td>5½ tons</td>
<td>£1 7 6</td>
</tr>
<tr>
<td>5 Beans</td>
<td>3 qrs. 5 bushels</td>
<td>£4 17 0</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>3 qrs. 1 bushel</td>
<td>£6 15 0</td>
</tr>
</tbody>
</table>

Per annum £4 7 ½

Upon these courses it is remarked, that their effects lead to different conclusions: in the first course, in which there are four green fallow crops, to two of the white or grain kind, little advantage is shown except in the leaving of the
CROPS.

The land in fine till, and perfectly clean. Nothing of superiority is shown by the quantities of produce for lands newly broken up. But it is observed, that the turnips, by being drawn and removed from the land, were not favourable, as wheat or turnip ground is not generally good, except well trodden by feeding. Potatoes appear to exhaust, and the experimenter suggests that eliminating thirty tons of yard compost, the proportion employed at any imaginable rate, the course cannot be advisable; the loss on the potato crop, would not, he thinks, be less than five pounds, nor would the turnips pay so as to leave a profit equal to the expenses of newly broken up lands for the first six years.

He however states the second as a more profitable course from the great charge of the potatoes not being incurred, and it shows that though cabbages cannot be grown to any great advantage on such soils, without manure, they may be of much utility by the pulverization and cleanliness which they afford. The goodness of the grain crops, evinced, it is supposed, that they exhaust but little, and that it is of great importance to have few white crops in rotation. And the third he considers as explaining the necessity of manuring for potatoes on all soils except such as are rich and dry. With only two white crops in six years, the land seems rather, it is observed, to improve, notwithstanding the potato crop. The goodness of the last crop of wheat, in comparison with the first, proves, he says, the superiority of cabbage and bean crops, over thole of beans and potatoes, in cleaning and rendering the ground fine and fit for the growth of wheat crops, in a perfect manner.

### Course IV.

<table>
<thead>
<tr>
<th>Product</th>
<th>Value</th>
<th>£</th>
<th>s.</th>
<th>d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Beans 3 qrs. 1½ bushels</td>
<td>-</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>2 Beans 4 qrs. 2 bushels</td>
<td>-</td>
<td>5</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>3 Wheat 2 qrs. 3½ bushels</td>
<td>-</td>
<td>5</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>4 Cabbages 6½ tons</td>
<td>-</td>
<td>1</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>5 Beans 4 qrs.</td>
<td>-</td>
<td>5</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>6 Wheat 3 qrs. 1 bushel</td>
<td>-</td>
<td>6</td>
<td>15</td>
<td>0</td>
</tr>
</tbody>
</table>

**Per annum** 4 16 6½

### Course V.

<table>
<thead>
<tr>
<th>Product</th>
<th>Value</th>
<th>£</th>
<th>s.</th>
<th>d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Beans 3 qrs. 2 bushels</td>
<td>-</td>
<td>4</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>2 Barley 3 qrs. 1 peck</td>
<td>-</td>
<td>3</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>3 Wheat 2 qrs. 2 bushels</td>
<td>-</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4 Barley 2 qrs. 2 pecks</td>
<td>-</td>
<td>2</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>5 Beans 2 qrs.</td>
<td>-</td>
<td>2</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>6 Wheat 1 qr. 7 bushels</td>
<td>-</td>
<td>4</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

**Per annum** 3 15 0

### Course VI.

<table>
<thead>
<tr>
<th>Product</th>
<th>Value</th>
<th>£</th>
<th>s.</th>
<th>d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Beans 3 qrs. 1 buhel, 1½ peck</td>
<td>-</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>2 Wheat 2 qrs. 7 bushels</td>
<td>-</td>
<td>6</td>
<td>3</td>
<td>0</td>
</tr>
</tbody>
</table>

**Carry over** 10 8 5

---

The experimenter says, that the results of these courses shew, in the first, the utility of repeated bean crops in cleaning land; and, when combined with cabbages, in preferring the fertility of such as is newly broken up. When compared with the first course, which ends in the same way, its advantages also appears, he thinks, great in different other respects. By the two last, the disadvantages attending successive crops of corn are particularly brought forward. And it is well remarked, that they also shew that any sort of corn crops will succeed, to a certain extent, on lands recently broken up, from the state of old grass or sward; and that, for the first two or three years, they may afford a produce proportionate to the fort of crop that is sown or cultivated on them. But that the three last years, on being compared with the three first, the whole while in corn, the produce was in the ratio of 9l. 14s. 5d. to 14l. 15s. 7d. or a decrease of more than 5s. While, in the preceding courses, with better rotations, the products have somewhat increased. The difference, he says, is therefore enormous. The decline in the barley, and even the wheat crops, notwithstanding the intervention of beans in the latter cafe, is very great. Besides, they leave the land in a bad condition, being in the fourth and sixth years such a bed of weeds, as could not be half destroyed by the hoeing of the beans. In these instances, the land not being left worth eleven shillings an acre, while in some of the preceding it was left of the value of sixteen. Thence, he well remarks, are the prejudicial effects of adopting bad courses of cropping, from the circumstances of old grass lands being capable of affording a good produce for a time. The same consequences may, likewise, he thinks, take place, even upon soils of a much better quality by such methods of cropping. It is evident that they should, therefore, be avoided as much as possible on all descriptions of soil by the correct farmer. The last of these courses not only exhibits the badness of the practice of taking successive grain crops, but that beans, by the aid of the hoeing culture, cannot afford a produce, even on newly broken up land, that will sufficiently repay the great trouble and expense of the farmer.

### Course VII.

<table>
<thead>
<tr>
<th>Product</th>
<th>Value</th>
<th>£</th>
<th>s.</th>
<th>d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Beans 3 qrs.</td>
<td>-</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>2 Turnips 4 tons</td>
<td>-</td>
<td>6</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>3 Beans 5 qrs. 2 bushels</td>
<td>-</td>
<td>6</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>4 Potatoes 2½ bushels</td>
<td>-</td>
<td>5</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>5 Beans 3 qrs.</td>
<td>-</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>6 Wheat 3 qrs. 4 bushels</td>
<td>-</td>
<td>7</td>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>

**Per annum** 4 17 6

---

Vol. X.
CROPS.

Course VIII.

<table>
<thead>
<tr>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Beans</td>
<td>3 qrs. 1 bushel</td>
</tr>
<tr>
<td>2 Cabbages</td>
<td>6 tons</td>
</tr>
<tr>
<td>3 Beans</td>
<td>3 qrs.</td>
</tr>
<tr>
<td>4 Cabbages</td>
<td>6½ tons</td>
</tr>
<tr>
<td>5 Beans</td>
<td>4 qrs. 2 bushels</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>3 qrs. 6 bushels</td>
</tr>
</tbody>
</table>

Per annum | £ 11 7 0 |

Course IX.

<table>
<thead>
<tr>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Beans</td>
<td>3 qrs.</td>
</tr>
<tr>
<td>2 Potatoes</td>
<td>147 bushels</td>
</tr>
<tr>
<td>3 Beans</td>
<td>4 qrs.</td>
</tr>
<tr>
<td>4 Cabbages</td>
<td>6½ tons</td>
</tr>
<tr>
<td>5 Beans</td>
<td>4 qrs. 2 bushels</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>3 qrs. 5 bushels</td>
</tr>
</tbody>
</table>

Per annum | £ 13 5 0 |

Course X.

<table>
<thead>
<tr>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Beans</td>
<td>3 qrs.</td>
</tr>
<tr>
<td>2 Beans</td>
<td>4 qrs.</td>
</tr>
<tr>
<td>3 Beans</td>
<td>4 qrs. 6 bushels</td>
</tr>
<tr>
<td>4 Cabbages</td>
<td>6½ tons</td>
</tr>
<tr>
<td>5 Beans</td>
<td>4 qrs.</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>4 qrs. 1 bushel</td>
</tr>
</tbody>
</table>

Per annum | £ 15 6 0 |

Course XI.

<table>
<thead>
<tr>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Beans</td>
<td>3 qrs. 7 pecks</td>
</tr>
<tr>
<td>2 Barley</td>
<td>4 qrs. 7 bushels</td>
</tr>
<tr>
<td>3 Beans</td>
<td>4 qrs.</td>
</tr>
<tr>
<td>4 Barley</td>
<td>5 qrs. 4 bushels</td>
</tr>
<tr>
<td>5 Beans</td>
<td>4 qrs. 1 bushel</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>3 qrs. 1 bushel</td>
</tr>
</tbody>
</table>

Per annum | £ 13 4 0 |

Course XII.

<table>
<thead>
<tr>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Beans</td>
<td>3 qrs.</td>
</tr>
<tr>
<td>2 Wheat</td>
<td>2 qrs. 6½ bushels</td>
</tr>
<tr>
<td>3 Beans</td>
<td>3 qrs. 2½ bushels</td>
</tr>
<tr>
<td>4 Wheat</td>
<td>3 qrs. 3½ bushels</td>
</tr>
<tr>
<td>5 Beans</td>
<td>3 qrs.</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>3 qrs.</td>
</tr>
</tbody>
</table>

Per annum | £ 9 1 0 |

The experimenter on these courses suggests, that it is evident, from the first, that successive crops of beans have a considerable ameliorating property, as both the cabbages and beans after them were very good. Their effects in preserving the fertility arising from the old turf is likewise obvious, as well as that of keeping the land perfectly free from weeds, at the same time that a good profit is afforded. It also, he supposes, affords a strong proof of the advantage of a careful method of cropping newly broken up lands. Such courses should, consequently, he says, be more frequently employed on all those light and retentive descriptions of land on which beans can be grown, both with the view of immediate profit, and the benefits that may arise from the land being kept clear and free from noxious weeds.

In respect to the second, it affords, in his opinion, an example of a good and correct mode of practice, without much exhaustion: though, if compared with the preceding course, there appears to be, he says, a flight degree of deterioration from the wheat, in that being a quarter more. It may, however, be adopted as a very profitable course. The last of these courses is well known to be a very profitable one on all the richer sorts of heavy soils; and it is here shewn, he thinks, to answer well on such as are of an inferior quality, even without the application of manure. The power of bean crops, in preserving the fertility of lands newly broken up from hard, is likewise here evinced by the sixth crop, though inferior to others. This course should not, however, in general, be attempted, except on the richer sort of heavy-soiled kinds of land.

Course XIII.

<table>
<thead>
<tr>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Turnips</td>
<td>3 tons</td>
</tr>
<tr>
<td>2 Turnips</td>
<td>5½ tons</td>
</tr>
</tbody>
</table>

Carry over | £ 1 14 0 |
CROPS.

Brought forward

<table>
<thead>
<tr>
<th>Crops</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oats</td>
<td>9 qrs.</td>
<td>£1.40</td>
</tr>
<tr>
<td>Potatoes</td>
<td>253 buhels</td>
<td>£6.12</td>
</tr>
<tr>
<td>Beans</td>
<td>3 qrs. 1 buhel</td>
<td>£4.50</td>
</tr>
<tr>
<td>Wheat</td>
<td>3 qrs. 5 buhels</td>
<td>£7.50</td>
</tr>
</tbody>
</table>

Per annum £4 13 8

Course XIV.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Turnips</td>
<td>3 tons</td>
<td>£0.12 0</td>
</tr>
<tr>
<td>2 Cabbage</td>
<td>6 tons</td>
<td>£1.00</td>
</tr>
<tr>
<td>3 Oats</td>
<td>10 qrs. 5½ buhels</td>
<td>£10.24</td>
</tr>
<tr>
<td>4 Cabbage</td>
<td>8 tons</td>
<td>£2.00</td>
</tr>
<tr>
<td>5 Beans</td>
<td>3 qrs. 5 buhels</td>
<td>£5.17</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>3 qrs. 1 buhel</td>
<td>£6.10</td>
</tr>
</tbody>
</table>

Per annum £4 8 6

Course XV.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Turnips</td>
<td>3½ tons</td>
<td>£0.14 0</td>
</tr>
<tr>
<td>2 Potatoes</td>
<td>1 ½ buhels</td>
<td>£0.17 0</td>
</tr>
<tr>
<td>3 Oats</td>
<td>8 qrs. 5½ buhels</td>
<td>£8.11</td>
</tr>
<tr>
<td>4 Cabbage</td>
<td>8 tons</td>
<td>£2.00</td>
</tr>
<tr>
<td>5 Beans</td>
<td>3 qrs. 5 buhels</td>
<td>£4.17</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>3 qrs. 1 buhel</td>
<td>£6.15</td>
</tr>
</tbody>
</table>

Per annum £4 7 6

The experimenter remarks on these courses, that the first exhibits the utility of repeated turnips crops in the preparation of this kind of soil for grain crops, the produce of the oats from the pulverization they effected being very great. It is added, that oats are mostly sown on newly broken up-lands, but never with much success on such as are wet. The exhaustion of the soil in this course seems not to have been great, though the oats were followed by potatoes, which are known to exhaust, as the succeeding bean and wheat crops were both good, but more especially the latter. It is obvious, however, he says, that as turnips and cabbages cannot be produced to advantage on such cold, wet soils, without much manure; that such rotations must be the most beneficial and proper on the drier sorts of land, where such crops can be grown and fed on the grounds by live stock. And, he adds, that the gross produce in the second course is not to be compared with the first, as the potatoes afford no guinea left no profit. The larger crops of the produce of oats seems to shew, he says, the beneficial effects of cabbage crops in preparing the soil. The inferiority of the wheat crop, when compared with that in the first of these courses, is supposed to depend on the want of manure. Notwithstanding there are two crops of cabbages and one of turnips in this course, it appears, he says, to be profitable. It would seem, however, to be the most suited to the more dry kinds of soil.

He states further, that in comparing the third course with the second that precede it, the deteriorating properties of potatoes are evidently much greater than those of either turnips or cabbages, from the inferiority of the oat crop that followed them. And it is suggested that, "wherever potatoes enter with a small produce, the expenses more than absorb the value."

Course XVI.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Turnips</td>
<td>3 tons</td>
<td>£0.12 0</td>
</tr>
<tr>
<td>2 Beans</td>
<td>4 qrs. 7 buhels</td>
<td>£5.60</td>
</tr>
<tr>
<td>3 Oats</td>
<td>8 qrs. 7 buhels</td>
<td>£9.90</td>
</tr>
<tr>
<td>4 Cabbage</td>
<td>6 tons</td>
<td>£10.00</td>
</tr>
<tr>
<td>5 Beans</td>
<td>3 qrs. 2 buhels</td>
<td>£5.00</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>3 qrs. 2 buhels</td>
<td>£7.00</td>
</tr>
</tbody>
</table>

Per annum £27 17 9

Course XVII.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Turnips</td>
<td>5½ tons</td>
<td>£0.14 0</td>
</tr>
<tr>
<td>2 Barley</td>
<td>5 qrs. 1 peck</td>
<td>£5.00</td>
</tr>
<tr>
<td>3 Oats</td>
<td>5 qrs. 5 buhels</td>
<td>£5.11 3</td>
</tr>
<tr>
<td>4 Barley</td>
<td>4 qrs. 7 buhels</td>
<td>£4.10 0</td>
</tr>
<tr>
<td>5 Beans</td>
<td>3 qrs. 2 buhels</td>
<td>£4.20</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>2 qrs. 4 buhels</td>
<td>£4.10 0</td>
</tr>
</tbody>
</table>

Per annum £24 7 10

Course XVIII.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Turnips</td>
<td>3 tons</td>
<td>£0.12 0</td>
</tr>
<tr>
<td>2 Wheat</td>
<td>2 qrs. 7 buhels</td>
<td>£6.50</td>
</tr>
<tr>
<td>3 Oats</td>
<td>4 qrs. 6½ buhels</td>
<td>£10.16 1</td>
</tr>
<tr>
<td>4 Wheat</td>
<td>2 qrs. 3 buhels ½ peck</td>
<td>£5.54</td>
</tr>
<tr>
<td>5 Beans</td>
<td>2 qrs. 4 buhels</td>
<td>£2.18 0</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>1 qrs. 7 buhels</td>
<td>£4.50</td>
</tr>
</tbody>
</table>

Per annum £24 1 5

On these courses he hints that the refult of the first displays the advantage of beans over potatoes in respect to profit. In the second, the land being left foul and in a bad condition, shews by the lightness of the wheat crop, when compared with those in other courses, that great deterioration had been produced by it. The last course exhibits a still worse practice, and that the land is left in a more deteriorated and foul situation by three wheat crops. Such courses can of course never be had recourse to with either the view of profit, or that of keeping the land in proper condition in respect to cleanliness.
### C R O P S.

#### Course XIX.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potatoes &amp; 156 bushels</td>
<td>2 l 13 s 0 d</td>
<td>18 16 s 0 d</td>
</tr>
<tr>
<td>2 Turnips &amp; 4½ tons</td>
<td>-</td>
<td>0 l 18 s 0 d</td>
</tr>
<tr>
<td>3 Potatoes &amp; 156 bushels</td>
<td>-</td>
<td>3 l 0 s 0 d</td>
</tr>
<tr>
<td>4 Ditto &amp; 198 bushels</td>
<td>-</td>
<td>4 l 19 s 0 d</td>
</tr>
<tr>
<td>5 Beans &amp; 2 qrs.</td>
<td>-</td>
<td>2 l 18 s 0 d</td>
</tr>
<tr>
<td>6 Wheat &amp; 1 qr. 6 bushels</td>
<td>-</td>
<td>4 l 0 s 0 d</td>
</tr>
</tbody>
</table>

Per annum 3 l 2 s 8 d

#### Course XX.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potatoes &amp; 183 bushels</td>
<td>2 l 12 s 0 d</td>
<td>15 6 s 6 d</td>
</tr>
<tr>
<td>2 Cabbages &amp; 5 tons</td>
<td>-</td>
<td>2 l 15 s 0 d</td>
</tr>
<tr>
<td>3 Potatoes &amp; 110 bushels</td>
<td>-</td>
<td>3 l 4 s 0 d</td>
</tr>
<tr>
<td>4 Cabbages &amp; 4 tons</td>
<td>-</td>
<td>4 l 10 s 0 d</td>
</tr>
<tr>
<td>5 Beans &amp; 2 qrs. 2 bushels</td>
<td>-</td>
<td>3 l 4 s 0 d</td>
</tr>
<tr>
<td>6 Wheat &amp; 2 qrs.</td>
<td>-</td>
<td>4 l 10 s 0 d</td>
</tr>
</tbody>
</table>

Per annum 2 l 11 s 0 d

#### Course XXI.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potatoes &amp; 104 bushels</td>
<td>2 l 12 s 0 d</td>
<td>15 3 s 6 d</td>
</tr>
<tr>
<td>2 Ditto &amp; 126 bushels</td>
<td>-</td>
<td>3 l 0 s 0 d</td>
</tr>
<tr>
<td>3 Ditto &amp; 97 ditto</td>
<td>-</td>
<td>2 l 8 s 6 d</td>
</tr>
<tr>
<td>4 Cabbages &amp; 3 tons</td>
<td>-</td>
<td>0 l 15 s 0 d</td>
</tr>
<tr>
<td>5 Beans &amp; 1 qr. 7 bushels</td>
<td>-</td>
<td>2 l 15 s 0 d</td>
</tr>
<tr>
<td>6 Wheat &amp; 1 qr. 4 bushels</td>
<td>-</td>
<td>3 l 0 s 0 d</td>
</tr>
</tbody>
</table>

Per annum 2 l 10 s 7 d

On these courses it is stated, that the deteriorating effects of potato crops are fully demonstrated. With manure in the proportion already explained in the fourth course, the beans which succeeded were, be fays, a very poor produce, and the wheat, though the only white crop in fix years, a miserable produce in a very good year. He adds, that in the fourth course, where there were two crops of wheat, with three of beans, the concluding wheat crop afforded three quarters one bushel, without any manure, a difference that is highly striking. And that in the eighth, three crops of beans, and two crops of cabbages, were followed with very good wheat, though cabbages removed from the ground exhaust; but in these courses there are scarcely any except successive wheat crops, that exhaust the land so greatly as potato crops are found to do.

With respect to the second course, it displays little else, he thinks, but a continued loss; and the third affords a proof of the lowest decrease of produce that can be supposed on newly broken up-land; besides, the soil is left too foul and deteriorated, that the whole of its fertility from improve.

The experimenter has remarked, that the first of these courses shows the exhausting effects of potatoes in a still more evident manner; but the effects of the beans are somewhat different than in the other cases noticed above.

It is supposed evident from the second, that barley succeeds better after potatoes than wheat; while the inferiority of the second crop proves that the preparation they afford is not perfectly suitable, and that the wheat that succeeds is affected by their deteriorating property. The third course not only confirms the different results that have been stated, but affords, by a comparison with the twelfth, proofs of the utility of having beans and wheat in alternate courses.

#### Course XXII.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potatoes &amp; 100 bushels</td>
<td>2 l 10 s 0 d</td>
<td>19 13 s 0 d</td>
</tr>
<tr>
<td>2 Barley &amp; 3 quarters</td>
<td>-</td>
<td>3 l 5 s 6 d</td>
</tr>
<tr>
<td>3 Potatoes &amp; 142 bushels</td>
<td>-</td>
<td>3 l 10 s 0 d</td>
</tr>
<tr>
<td>4 Barley &amp; 5 tons</td>
<td>-</td>
<td>1 l 5 s 0 d</td>
</tr>
<tr>
<td>5 Beans &amp; 2 qrs. 3 bushels</td>
<td>-</td>
<td>3 l 10 s 0 d</td>
</tr>
<tr>
<td>6 Wheat &amp; 2 qrs. 1 bushel</td>
<td>-</td>
<td>4 l 15 s 0 d</td>
</tr>
</tbody>
</table>

Per annum 3 l 5 s 6 d

#### Course XXIII.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potatoes &amp; 101 bushels</td>
<td>2 l 10 s 0 d</td>
<td>24 10 s 6 d</td>
</tr>
<tr>
<td>2 Barley &amp; 4 qrs. 7 bushels</td>
<td>-</td>
<td>5 l 7 s 6 d</td>
</tr>
<tr>
<td>3 Potatoes &amp; 127 bushels</td>
<td>-</td>
<td>3 l 3 s 6 d</td>
</tr>
<tr>
<td>4 Barley &amp; 5 qrs. 2 bushels</td>
<td>-</td>
<td>3 l 15 s 0 d</td>
</tr>
<tr>
<td>5 Beans &amp; 2 qrs. 7 bushels</td>
<td>-</td>
<td>3 l 10 s 0 d</td>
</tr>
<tr>
<td>6 Wheat &amp; 2 qrs. 5 bushels</td>
<td>-</td>
<td>5 l 15 s 0 d</td>
</tr>
</tbody>
</table>

Per annum 4 l 1 s 9 d

#### Course XXIV.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potatoes &amp; 100 bushels</td>
<td>2 l 10 s 0 d</td>
<td>21 11 s 0 d</td>
</tr>
<tr>
<td>2 Wheat &amp; 2 qrs. 1 bushel</td>
<td>-</td>
<td>4 l 15 s 0 d</td>
</tr>
<tr>
<td>3 Potatoes &amp; 104 bushels</td>
<td>-</td>
<td>2 l 12 s 0 d</td>
</tr>
<tr>
<td>4 Wheat &amp; 2 quarters</td>
<td>-</td>
<td>4 l 10 s 0 d</td>
</tr>
<tr>
<td>5 Beans &amp; 2 qrs. 2 bushels</td>
<td>-</td>
<td>3 l 4 s 0 d</td>
</tr>
<tr>
<td>6 Wheat &amp; 2 qrs. 6 bushels</td>
<td>-</td>
<td>4 l 0 s 0 d</td>
</tr>
</tbody>
</table>

Per annum 3 l 11 s 10 d
### CROPS.

#### Course XXV.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potatoes</td>
<td>98 bushels</td>
<td>£3 9 0</td>
</tr>
<tr>
<td>2 Turnips</td>
<td>4 tons</td>
<td>0 10 0</td>
</tr>
<tr>
<td>3 Cabbages</td>
<td>5½ tons</td>
<td>1 7 6</td>
</tr>
<tr>
<td>4 Potatoes</td>
<td>27½ bushels</td>
<td>6 15 0</td>
</tr>
<tr>
<td>5 Beans</td>
<td>2 qrs. 2 bushels</td>
<td>3 4 0</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>2 qrs. 2 bushels</td>
<td>5 0 0</td>
</tr>
</tbody>
</table>

Per annum | £19 11 6

#### Course XXVI.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potatoes</td>
<td>101 bushels</td>
<td>£2 10 6</td>
</tr>
<tr>
<td>2 Cabbages</td>
<td>6 tons</td>
<td>1 10 0</td>
</tr>
<tr>
<td>3 Cabbages</td>
<td>5½ tons</td>
<td>1 7 6</td>
</tr>
<tr>
<td>4 Cabbages</td>
<td>3 tons</td>
<td>0 15 0</td>
</tr>
<tr>
<td>5 Beans</td>
<td>2 qrs. 6 bushels</td>
<td>3 16 0</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>2 qrs. 2 bushels</td>
<td>5 0 0</td>
</tr>
</tbody>
</table>

Per annum | £14 19 0

#### Course XXVII.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potatoes</td>
<td>100 bushels</td>
<td>£2 10 0</td>
</tr>
<tr>
<td>2 Potatoes</td>
<td>115 bushels</td>
<td>2 17 6</td>
</tr>
<tr>
<td>3 Cabbages</td>
<td>3½ tons</td>
<td>0 17 6</td>
</tr>
<tr>
<td>4 Cabbages</td>
<td>3½ tons</td>
<td>0 17 6</td>
</tr>
<tr>
<td>5 Beans</td>
<td>2 qrs. 2 bushels</td>
<td>3 4 0</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>2 quarters</td>
<td>4 10 0</td>
</tr>
</tbody>
</table>

Per annum | £14 16 6

The writer remarks, that in the first of these courses, though the potatoes of the fourth crop were manured for as above, the poornels of the wheat crop, which was the only one of the grain kind in fix years, shews the exhausting effects of cabbage and turnip crops, when removed from the ground in combination with potatoes, to be considerable; and from the second it is evident, that cabbages, when not confumed upon the land, are prejudicial as not to permit the ameliorating powers of beans to secure a favourable crop of wheat. Neither this nor the preceding course is therefore profitable. The lant is flated to be a course of nothing but los, and which shews, in addition, the exhausting effects of potatoes and cabbages to be great, when removed from the ground to be confumed in other situations.

#### Course XXVIII.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potatoes</td>
<td>96 bushels</td>
<td>£2 8 0</td>
</tr>
<tr>
<td>2 Beans</td>
<td>3 qrs. ½ peck</td>
<td>4 2 4</td>
</tr>
</tbody>
</table>

Carried over | £6 10 4

#### Course XXIX.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potatoes</td>
<td>100 bushels</td>
<td>£2 10 0</td>
</tr>
<tr>
<td>2 Barley</td>
<td>4 tons</td>
<td>1 0 0</td>
</tr>
<tr>
<td>3 Cabbages</td>
<td>4 tons</td>
<td>1 0 0</td>
</tr>
<tr>
<td>4 Barley</td>
<td>4 qrs. 1 bushel</td>
<td>4 12 6</td>
</tr>
<tr>
<td>5 Beans</td>
<td>3 quarters</td>
<td>4 2 0</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>2 qrs. 6 bushels</td>
<td>6 0 0</td>
</tr>
</tbody>
</table>

Per annum | £23 11 3

#### Course XXX.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potatoes</td>
<td>99 bushels</td>
<td>£2 9 6</td>
</tr>
<tr>
<td>2 Wheat</td>
<td>2 qrs. 7 bushels</td>
<td>6 5 0</td>
</tr>
<tr>
<td>3 Cabbages</td>
<td>4½ tons</td>
<td>1 2 6</td>
</tr>
<tr>
<td>4 Wheat</td>
<td>3 qrs. 6 bushels ½ pecks</td>
<td>8 1 6</td>
</tr>
<tr>
<td>5 Beans</td>
<td>2 qrs. 6 bushels</td>
<td>3 16 0</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>2 quarters</td>
<td>4 10 0</td>
</tr>
</tbody>
</table>

Per annum | £26 5 6

The experimenter observes, that the courses in which potatoes and cabbages, not confumed on the land, enter in any considerable degree, all prove the same thing, that, under particular circumstances, they are both prejudicial in exhausting the land; and that the two latter courses, when compared with those of eleven and twelve, display the advantages of beans over potatoes and cabbages in a manner that is extremely obvious, and highly in their favour.

#### Course XXXI.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Potatoes</td>
<td>100 bushels</td>
<td>£2 10 0</td>
</tr>
<tr>
<td>2 Turnips</td>
<td>4 tons</td>
<td>1 0 0</td>
</tr>
<tr>
<td>3 Turnips</td>
<td>5 tons</td>
<td>1 0 0</td>
</tr>
<tr>
<td>4 Potatoes</td>
<td>28½ bushels</td>
<td>7 4 0</td>
</tr>
<tr>
<td>5 Beans</td>
<td>3 quarters</td>
<td>4 2 0</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>2 qrs. 7 bushels</td>
<td>6 5 0</td>
</tr>
</tbody>
</table>

Per annum | £21 17 0

---

The writer observes, that the courses in which potatoes and cabbages, not confumed on the land, enter in any considerable degree, all prove the same thing, that, under particular circumstances, they are both prejudicial in exhausting the land; and that the two latter courses, when compared with those of eleven and twelve, display the advantages of beans over potatoes and cabbages in a manner that is extremely obvious, and highly in their favour.
C R O P S.

Course XXXII.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>£. s. d.</td>
</tr>
<tr>
<td>1 Potatoes</td>
<td>100 bushels</td>
<td>-</td>
</tr>
<tr>
<td>2 Cabbage</td>
<td>5 tons</td>
<td>-</td>
</tr>
<tr>
<td>3 Turnips</td>
<td>4 tons</td>
<td>-</td>
</tr>
<tr>
<td>4 Cabbage</td>
<td>4 qrs.</td>
<td>-</td>
</tr>
<tr>
<td>5 Beans</td>
<td>3 quarters</td>
<td>-</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>2 qrs. 6 bushels</td>
<td>-</td>
</tr>
</tbody>
</table>

Per annum 2 12 3

Course XXXIII.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>£. s. d.</td>
</tr>
<tr>
<td>1 Potatoes</td>
<td>100 bushels</td>
<td>-</td>
</tr>
<tr>
<td>2 Cabbage</td>
<td>112 bushels</td>
<td>-</td>
</tr>
<tr>
<td>3 Turnips</td>
<td>4 tons</td>
<td>-</td>
</tr>
<tr>
<td>4 Cabbage</td>
<td>4 qrs. 6 bushels</td>
<td>-</td>
</tr>
<tr>
<td>5 Beans</td>
<td>2 qrs. 5 bushels</td>
<td>-</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>1 qrs. 3 bushels</td>
<td>-</td>
</tr>
</tbody>
</table>

Per annum 2 13 9

Here the writer fuggetts, that the profit of those courses is too trifling to recommend them; and the products of the fifth and sixth years' crops are supposed to be less than they ought to be, from the circumstance of manure being applied in the fourth, and there being only one grain crop in the course; of course, that potatoes, even when manured for, leave the soil in no very advantageous situation for the growth of wheat, though assisted by the cleaning and improving qualities of bean crops.

And that the second and third courses are equally decisive in shewing the exhausting effects both of potato and cabbage crops, when not consumed on the land, as well as that they are courses that should seldom be employed, where they cannot be manured for, and be fed off upon the land by live stock.

Course XXXIV.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>£. s. d.</td>
</tr>
<tr>
<td>1 Potatoes</td>
<td>98 bushels</td>
<td>-</td>
</tr>
<tr>
<td>2 Beans</td>
<td>3 qrs. 1 peck</td>
<td>-</td>
</tr>
<tr>
<td>3 Turnips</td>
<td>4 tons</td>
<td>-</td>
</tr>
<tr>
<td>4 Cabbage</td>
<td>4½ tons</td>
<td>-</td>
</tr>
<tr>
<td>5 Beans</td>
<td>3 quarters</td>
<td>-</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>2 qrs. 6 bushels</td>
<td>-</td>
</tr>
</tbody>
</table>

Per annum 3 2 10

Course XXXV.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>£. s. d.</td>
</tr>
<tr>
<td>1 Potatoes</td>
<td>100 bushels</td>
<td>-</td>
</tr>
<tr>
<td>2 Barley</td>
<td>4 qrs. 6 bushels</td>
<td>-</td>
</tr>
</tbody>
</table>

Carry over 7 16 10

Course XXXVI.

<table>
<thead>
<tr>
<th>Course</th>
<th>Produce</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>£. s. d.</td>
</tr>
<tr>
<td>3 Turnips</td>
<td>4 tons</td>
<td>-</td>
</tr>
<tr>
<td>4 Barley</td>
<td>4 qrs.</td>
<td>-</td>
</tr>
<tr>
<td>5 Beans</td>
<td>3 qrs.</td>
<td>-</td>
</tr>
<tr>
<td>6 Wheat</td>
<td>3 qrs.</td>
<td>-</td>
</tr>
</tbody>
</table>

Brought forward 23 14 10

Per annum 3 19 1

On these three courses it is observed, that the first shews still more fully the effects of potatoes and cabbages. The second also shews, that while the turf of newly broke-up grounds is in a state of decay, spring corn succeeds well after potato crops. It likewise proves that these grain crops may be grown in fix years, without the fuel being greatly exhausted, where proper care and attention is paid to the nature of the crops that are interposed between them in the different courses.

From the numerous facts and observations which have been stated above, we may be enabled to comprehend more clearly the nature and principles of the modern system of cropping land, or the art of properly regulating the courses of crops; by which, long experience has now satisfactorily demonstrated, that ground may be preferred in a tolerable state of heart with a considerably less supply of manure, than under other circumstances; the great excellence of the naked fallow process is avoided; and where a proper plan is pursued in the consumption of the different green and other crops, an abundant supply of dung be provided for the further improvement of the land.

It has been stated by a late writer in his "System of Practical Husbandry," that the injurious consequences of cropping land with grain, and other kinds of crops, which deteriorate and exhaust in a high degree, may probably be prevented in the best manner on the more light and retentive sorts of land, whether of the clayey or loamy kinds, by the interposing of bean and clover or tame crops between them; as the experiments detailed above have shewn the former to possess the power of ameliorating the condition of such soils, and the latter seems not less calculated for the same purpose, as it is known to grow well on those sorts of land; and on thole of a more light and dry quality, whether sandy, or of a gravelly nature, the intermixing of turnip, pea, and other crops of the same sort with those of corn may be equally successful. In many cases, especially on the more heavy kinds of soil, it may be necessary and highly beneficial to take two green crops for one of grain. This, it is remarked, is a practice that the results of the trials, just detailed, place in a disadvantageous point of view, and which has extended itself over a considerable tract of land, with great success,
CROPS.

in the county of Middlesex, and by which, from the cleanliness of the cultivation, and the great vigour of the land, in consequence of the few corn crops, the grain is found of a superior quality. It is indeed remarked by Mr. Middleton, a writer of considerable experience, that "land under common circumstances will not even bear without injury a corn crop every two years." This is fully shown, he conceives, "by the turnip crops in Norfolk being uniformly found to be not only less certain, but much lighter than formerly, as well as from the same remark being applicable to the clover, and probably to the corn crops. Such diminutions in the quantity of produce, he supposes, demonstrate that the valuable and favourite rotation of that district, as turnips, barley, clover, wheat, is somewhat more than the ground can sustain, as it appears to be gradually sinking under too much exhaustion." With the aid of extensive sheep-walks, he conceives the soil not even capable of supporting the depressing consequences of the present course of crops, particularly, when a five years' course, by introducing barley after wheat, is improperly employed.

Various rules have been laid down by writers on husbandry for regulating and proportioning the different sorts of crops to different kinds of soil. In the "Agricultural Survey of the County of Middlesex," the following are advised as the most suitable under the different circumstances and wants of soils:

For the best sorts of land, alternate green and white crops.
For those of a medium quality, three green crops for two of the grain or white kind.
For ordinary land, two of the green for one of the corn kind. And,
For the worst or most exhausted, as downs and sheep-walks, three green crops for one of the white or grain kind.

These may be arranged as below to a still greater number of green crops.

Course IV.

Four Green Crops to one of Grain.
1. Tares.
2. Potatoes, or cole for sheep feed.
3. Turnips.
4. Corn.
5. Clover.

Which affords five crops in four years.

Course V.

Five Green Crops to one of Grain.
1. Pea.
2. Beans.
3. Corn.
4. Clover.
5. Tares.
6. Turnips.

Which affords six crops in five years.

It is suggested, that by cropping in these ways and proportions, the land may be kept perfectly clean from weeds, and in a high state of cultivation; and that under such a system it might be continued in a perpetual state of tillage, "with a continual succession of large products." And that in addition, the farmer would be more certain of obtaining plentiful returns for his labour, expense, and exertion.

The able writer of the Survey mentioned above, wishes also to draw the attention of farmers, particularly where the soil is proper for barley, to the crops stated below, in the view of affording a continued successional abundant supply of the best kinds of green food, the whole year round.

Water meadows,
Rye-grafs,
Rye, cut green,
Winter tares,
Clover, the first crop,
Spring tares,
Clover, the second crop,
After grafs of meadows, clover, and feeds of all sorts.
Turnips,
Potatoes,
Cabbages, common sorts, favoys,
Cole, green boor-cole, and purple boor-cole,
Swedish turnips,
Turnip-rooted cabbage,
Kohlrabi.

Where these different crops are raised on a sufficient scale to the extent of the farm, and the quantity of live flock, there can be no inconvenience sustained, it is supposed, for the want of food for them, at any period or season of the year. "Water meadows," says the writer, "afford a vast deal of food from the middle of March; rye-grafs from the first of April; rye from the beginning of May; winter tares from fallow; then comes clover the first crop; spring tares; clover the second crop; and the after-grafs of natural meadows, clover, &c. which will continue in perfection for heavy cattle till early fowl turnips are ready. Late fowl turnips and cabbages will be sufficient till the end of February, without illowing; about which time the cole, Swedish turnip, and turnip-rooted cabbage will come in, and continue good through March, April, and even May, if needful." All which, he thinks, more than complete the circle of the year.

The variations of courses which are capable of being made use of under different states and situations of land are very numerous, but the following may be sufficient for the present purpose:

I. On strong wet soil, where a fallow is intended.

Course I. Course V.
1. Fallow, or 1. Fallow.
2. Barley.
3. beans.
5. Tares.
7. Clover.
CROPS.

7 Clover, 7 Oats.
8 Beans 8 Tares.
9 Wheat 9 Barley.

It is the most improved practice in these cases to let the fallow be the preparation for the first corn crop, depending on some kind of green crop for those that follow, without any repetition of it.

Other courses in this case may be as below:

\[\text{Course.}\]
1 Fallow.
2 Barley.
3 Clover.
4 Wheat.

Or in cases where manure is in plenty, it may be better thus:

\[\text{Course.}\]
1 Fallow, or 1 Cabbage, beans, or peas.
2 Wheat 2 Barley or oats.
3 Beans 3 Clover.
4 Barley 4 Wheat.
5 Clover 5 Wheat.
6 Wheat.

And in some cases where the culture is well executed, the course may run in this way:

\[\text{Course.}\]
1 Turnips.
2 Oats.
3 Vetches.
4 Wheat.

In converting lands of these kinds to the state of tillage from that of grass or sward, by means of paring and burning, the proper course may be:

\[\text{Course.}\]
1 Coke.
2 Beans.
3 Wheat.
4 Beans.
5 Wheat.

It is the remark of the Rev. Mr. Cartwright, in an able Essay in the fourth volume of "Communications to the Board of Agriculture," that tares, though by some objected to with propriety, as coming too late in the spring season on such sorts of land, may be occasionally introduced with advantage, in the view of being eaten off by sheep, or mown green for horses, milch cows, young flocks, and hogs. By these methods of cropping, with proper regard to the eating off the green crops on the ground, where it can be effected without injury; or to the removing them to be confined in the fold yards, or other places, in order to the manure being afterwards applied; the ground may not only be ameliorated, by being rendered more rich and friable, but be preferred perfectly free from all defacements of weeds.

In the generality of the heavier kinds of land of this description, when brought into tillage from the state of old sward, it would seem that beans would be the most suitable crop to begin with, notwithstanding the most usual practice has been to have recourse to oats in such cases; as from the gradual decay of the turf and grassy materials, the growth of the beans may be greatly promoted, and large crops thus produced. Besides, the roots of the bean plants, by their penetrating deeply, render the land more mellow, and at the same time improve it, bringing it more expeditiously to the proper state for wheat.

Where, however, the quality of the land is more light and mellow, peas are often capable of being introduced with greater benefit as a first crop after breaking up. However, in very old sward, from worms, grubs, and flugs being often prevalent in them, great injury may be sustained by the first crops from these causes: consequently the processes of paring and burning should be adopted; or the use of the trench plough, that the turf and the grassy material may be got quit of as much as possible. And in this view it has likewise been advised, as of much advantage, to have such lands kept as closely tilled down as possible before the time of breaking them up; as by such a practice less work may be deposited by the fly, and consequently fewer of such injurious animals generated. But in all such cases, beans are considerably less liable to suffer injury in this way than peas.

11. On Soils of the Sound loamy kind where Fallows are excluded.

\[\text{Course.}\]
1 Turnips, or 1 Turnips.
2 Barley 2 Ruta bago.
3 Clover 3 Barley.
4 Wheat 4 Clover.
5 Cabbages 5 Beans.
6 Oats 6 Wheat.
7 Tares 7 Beans.
8 Barley 8 Wheat.
9 Beans
10 Wheat.

On these courses it may be observed, that the soil must be in a high state of fertility to support the frequent recurrence of these exhausting grain crops; and that more green crops will frequently be required.

III. On the rich Kind of Sandy Soils.

\[\text{Course.}\]
1 Turnips.
2 Barley.
3 Carrots.
4 Barley.
5 Clover.
6 Wheat.

It would appear to be the practice of the best arable districts, on these two last sorts of soils, to have recourse to turnips as a preparation for barley, and clover that for wheat, in this way.

\[\text{Course.}\]
1 Turnips.
2 Barley.
3 Clover.
4 Wheat.

But in this course it may sometimes be proper to substitute oats in the place of the barley, as well as tares, chicory, or some other kind of artificial grass feed, in the room of the clover.

In bringing lands of these kinds into a state of tillage from that of grass or sward, where the practice of paring
ing and burning is employed, the proper course may be this:

**Course.**
1. Turnips.
2. Barley.
3. Clover.
5. Turnips.
7. Clover.
8. Wheat.

But where the land is only to be kept a short time under the tillage system, a more proper course may be:

**Course.**
1. Turnips.
2. Barley.
3. Clover.
5. Turnips.

In cases where paring and burning are not practised, which is not so common, it may be the best plan to begin with beans or pea-dibble, and then go on as above. But in cases of this kind, the turnip and clover crops are constantly to be eaten off, upon the land, by sheep, or some other kind of live flocks. In the more dry and light soils of this description, pea crops may likewise be had recourse to as a first crop; especially the white fowls under the dibbling practice; then going on with the other crops in the above manner. In soils where potatoes are begun with, it will be requisite to have more of the ameliorating crops, in consequence of their greater effect in exhausting and injuring the land, as has been shewn by the experiments stated above.

In particular districts, on some soils, merely of the sandy fort, it is also the practice to make turnips the preparation for both grafs and grain; and experience has shown that there are few of these soils so light as not to afford such a crop. In cases of this kind, the course is usually this:

**Course.**
1. Turnips.
2. Barley.
3. Grafs feeds.

Here the grafs, being raised in the view of sheep feed, should of course be such as will fland for some time, as it is not by any means a good method to break up the land again too soon; for the flocks fed upon the turnips in the winter season, are not provided with a due quantity of food on such new layers of their summer support.

In the county of Suffolk, as appears from the Agricultural Report of that district, on the better kinds of sandy soils, the layers are frequently planted with pea by dibbling, to much advantage, after being broken up, without being fed with sheep during the summer season: the succeeding crop of wheat being, in such methods, much larger. The following is considered as an excellent course on such forts of soil:

**Course.**
1. Turnips.
2. Barley.
3. Trefoil and ray grafs.
4. Pea dibbled.
5. Barley dibbled.

Where they are intended to be kept in tillage longer than this course, the turnip, barley, and grafs crops may be alternately had recourse to, until the fifth or seventh year, or even longer, where it is supposed necessary. And here likewise, when potatoes are employed as the first crop after breaking up, from their deteriorating property being considerable, they must be succeeded by more numerous improving crops, as turnips and grafs, as shewn in the above courses.

In soils of this nature, which are of the poor, light, blowing kind, their want of tenacity must be corrected by the use of earthy sublimates of the clayey kind in suitable proportions, and the furnishing of the crops upon the land by sheep. But where these means cannot be had recourse to, the course given above will be found highly proper and beneficial.

IV. On the more dry Sorts of Soils, as the Limework or calcareous Kinds, and those of the gravelly and flinty Description.

**Course.**
1. Turnips.
2. Barley.
3. Clover.
5. Saintflee for ten years or more, then pared and burned for.
6. Turnips.
8. Pea.

The dry, gravelly, and flinty soils, where of the lighter descriptions, should be cropped in such a way as that their moisture may be preserved in them in the most perfect manner, and their fertility be impaired in the least possible degree. In this situation, two or more of the green fort of crops for one of grain may often be proper, as in the above courses; or, in the following manner:

**Course.**
1. Turnips.
2. Barley.
3. Sail.
5. Barley.
6. Barley, with grafs feeds.

And in many situations and circumstances of such lands, peas, tares, and clover may be had recourse to in the courses with great propriety and benefit. And where fints are abundant, from having been supposed incapable of being performed with facility, has been suggejted that the turnips should be sown thin, and a portion of cole feed be blended with them, by which an abundant supply of sheep food may be afforded. It has been also advised in these sorts of soil, that the corn crops, particularly those of the spring kind, should be constantly sown early, where the land is sufficiently dry, that they may be so forward as to cover the ground well before the hot season sets in, and thereby prevent the injury that must be sustained by too much dification of their moisture.

But that, on the heavier forts of soils of this nature, beans or pea-seed may often be made the preparation for barley, or even occasionally for wheat, in this way:

**Course.**
1. Beans or pea-seed.
2. Barley.
3. Clover.

And the course may be further varied, by having recourse to tares and turnips, according as the date of the land may be suitable.

In regard to the thinner description of chalky soils, and such old down lands as are become so unproductive of herbage,
CROPS.

Barley, as to be incapable of being continued any longer in the state of sheep walk or pasture, it has been proposed, as the best method of cropping them when brought under the plough, to make turnips or some other luxuriant green crop, which, while it keeps the land clean, and affords a large supply of green food for the support of sheep or other fort of live stock, is highly beneficial by preventing the humidity, which in such forts of land is liable to be too rapidly carried off, the preparation for corn. The course in this view may stand thus:

Course.
1. Turnips.
2. Barley.
3. Clover.

Or in particular instances, as where seed weeds are apt to prevail in a high degree, two crops of turnips may be grown before any grain crop with much benefit. And in cases where such lands are designed to be kept for a greater length of time in the state of tillage, two crops of turnips may be again taken after the wheat, which will leave the land in a perfect state of preparation for barley; after which faintjoin may be introduced, as affording an excellent sheep pasture for a number of years. But in these cases the turnip and clover crops must always be fed off by sheep, which ought not to be removed from the land during the whole of the time the crops are in confinement: such other forts of food as may be necessary being conveyed to them on the ground. In this way, it is imagined, the land will be left in the best state possible for the growth of barley, without the great trouble and expense which must otherwise be incurred for manure.

In cases where the soil is sufficiently friable and mellow in its nature, the method of cropping may be in this way:

Course.
1. Pease.
2. Oats.
3. Turnips.
4. Barley with grafs seeds.

Or where it is intended to continue the course, it may be done by going on with turnips or pease as before; concluding the course with faintjoin, as supplying a pasture for sheep for a number of years.

By properly attending to these directions in the courses of cropping, and the modes of managing such sorts of land, very considerable improvement may be made, both in rendering them capable of producing excellent crops of the grain kind, and in affording a much larger supply of green food for the support of sheep, and other sorts of live stock, than is commonly observed under other modes of cropping and consuming their produce.

V. On the peaty kinds of soil, and such as have been long under the system of grain crops.

Course.
1. Cole-feed, or turnips.
2. Cole-feed, or turnips.
3. Oats.
4. Ruta bags, or Swedish turnips.
5. Barley.
6. Graffes.
7. Graffes.
8. Graffes.
9. Graffes.

In the business of cropping soils of the peaty, moory, and fenney kinds, it has been recommended by some writers, after freeing them by suitable draining from injurious moisture and wetness, that a difference should be made according as they are deep, or the contrary, in the superficial peaty covering. It is supposed that, in the former kind, the most suitable method may be that of making turnips, potatoes, cabbages, cole, or any of such sorts of crops, the plants of which produce much shade; and which, by preserving the moisture in the more superficial parts of the land, may promote their decomposition and decay, the preparation for corn; in which intention the course may be:

Course.
1. Turnips, cabbages or cole.
2. Oats.
3. Turnips, cabbages or cole.
4. Oats.
5. Clover.
7. Turnips, &c.
8. Oats with grafs feeds, to remain some years.

It may be remarked here that potatoe crops, though they have been considered objectionable by some farmers from their great exhausting quality in this kind of land, have been shown by experience to be highly beneficial and proper. Where this sort of crop is in use the course may be:

Course.
1. Potatoes.
2. Oats.
3. Turnips, cole or cabbages.
4. Turnips, cole or cabbages.
5. Oats with grafs feeds.

On this description of soil in the northern parts of Scotland, the use of potatoes, as a first crop, has been found, the author of Modern Agriculture says, by much the most certain and beneficial mode, the succeeding oat crops being not only in most cases more certain, but greatly more abundant and productive.

But on the thinner kinds of soils of this nature, as those of the moory and fenney sorts, with the subsoil of a stiff and retentive quality, it may be the most advisable to commence with cole, making it the preparation for corn, in this manner:

Course.
2. Oats, 2. Oats.
5. Wheat.
7. Oats.

But in the latter of these courses, in consequence of potatoes and wheat coming together, it is probable they may be too much for the land, as the experiments hitherto above have shown them to be highly exhausting crops: a better plan may be, therefore, that of substituting beans in the place of the potatoes, in this manner:

Course.
2. Oats with manure.
CROPS.

Beans.
Wheat.
Cole.
Oats.

And it is not improbable but that, in some cases of this nature, clover crops may be introduced as a preparation for the wheat. In this description of soils immense benefits and improvements may be produced by attention to proper modes of cropping.

In those circumstances where the dry quality of such soils, and their dilution to the production of a good turf or flake, is such as to admit of being cultivated under the convertible system, or that of alternate grain and grass, which is often a most advantageous method; it will be proper, in directing the course of cropping, not only to consider the particular quality of the soil, but the growth of such sorts of roots and plants, or other crops, as may, while they tend to clean, improve, and prepare the ground for the production of abundant crops of grain and grass, be the most suited to the feeding, rearing, and maintaining of those descriptions of live stock which are capable of affording the most regular and abundant supplies of human food, at the different feasons or periods when they are the most wanted.

This is a system of practice which may often be carried on to great advantage and profit upon the loamy, gravelly, and fenny, as well as the thinner sorts of peaty soils; as in consequence of their having a great number of different grass crops fed off upon the grounds, a degree of amelioration and improvement is effected, while they are under the tillage system, which must be highly beneficial for the production of grass; and by being occasionally laid down to grass for a short interval, and thickly stocked with sheep or other animals, they must become in an excellent state for being again brought under the plough. This is in short a sort of husbandry which has been found extremely beneficial in many districts. It is practiced with vast advantage in the county of Northumberland; it having been there found that, on the sandy and dry light loamy soils, excellent grain crops, especially oats, may be grown by the lands remaining three years under grass, closely eaten with sheep, which could never be done while they were managed according to their old method of practice.

Under this system of management, on the more wet and stiff kinds of loam, where there is considerable fertility, the course of cropping may be as below, after soil breaking up:

Course.
1 Beans or oats.
2 Turnips.
3 Barley.
4 Clover, or winter tares.
5 Wheat.
6 Turnips.
7 Barley.
8 Grains feeds for three, four, or more years.

Or,

Course.
1 Oats.
2 Beans.
3 Wheat.
4 Fallow and grains for four or five years.

On the dryer kinds of these sorts of soil, it is supposed better to begin in a somewhat different way.

Course.
1 Pease or turnips.
2 Barley.
3 Clover.
4 Wheat.
5 Turnips.
6 Barley with grains feeds for not less than three years.

Or,

Course.
1 Oats.
2 Turnips.
3 Barley with feeds to remain three or four years.

But in cases where large supplies of green food are in demand, or danger is apprehended from the wire worm grub, &c., the course may be commenced with more propriety by turnips or cabbages.

In Cumberland, where different plans of cropping, in this view, are flat to have been attempted, the course of:

Course.
1 Turnips.
2 Barley.
3 Clover.
4 Wheat.

is said to have been made of till there was an evident falling off in the crops, especially in those of the green corn; in which circumstances the only means of rethrowing the lands has been found to be that of permitting them to remain, after they have been three years under the plough, the same length of time in the state of grass; it being discovered that "by this mode nature has time to prepare a sufficient fennel, which being turned up for the turnip fallow, will encourage a vigorous crop of turnips, as it is well known they always flourish upon fresh land, or where they find the remains of a lea clover to vegetate in."

These, and various other facts of the same kind, fully shew that great advantage may be gained by cultivating lands under this alternate system of tillage and grass, especially when, with the proper knowledge of the nature and modes of managing different kinds of live stock, that of the best means of connecting them with this sort of tillage husbandry, is fully comprehended.

Where the land, after some time, is to be restored to the condition of sward, and the practice of horse-hoing had recourse to for preserving the different crops in a perfectly clean state; and the various green crops, as turnips, peas, and beans, are at the same time cultivated in double rows, on ridges of three feet in breadth, and those of the cabbage kind in single rows on the same ridges; the courses given below have been flat to answer well, by the Rev. Mr. Cloke, for any length of time, in all the different kinds of soils.

Course.
On Clay.
1 Turnips or cabbages.
2 Oats.
3 Beans and clover.
4 Wheat.
5 Turnips or cabbages.
6 Oats.
7 Beans and vetches.
8 Wheat.

Course.
On loamy Leams.
1 Turnips or cabbages.
3 1 2 3 1 2 Oats.
2 Oats.
3 Clover.
4 Wheat.
5 Turnips or cabbages.
6 Barley.
7 Beans.
8 Wheat.

**Course.**

*On rich or sandy Loams.*
1 Turnips or Potatoes, and
2 Barley,
3 Clover,
4 Wheat,
5 Beans,
6 Barley,
7 Peafe,
8 Wheat.

In cases of this kind it is suggested that ten acres in each hundred should be laid down with saffron for eight or ten years.

**Course.**

*On peaty Earth.*
1 Turnips.
2 Barley.
3 Clover.
4 Wheat.
5 Potatoes.
6 Barley.
7 Peafe.
8 Wheat.

**Course.**

*On chalky Subsoil.*
1 Turnips.
2 Barley.
3 Clover.
4 Wheat.
5 Potatoes.
6 Barley.
7 Peafe.
8 Wheat.

The nature and principles on which the system of cropping ground should be founded, with the courses which have been found most beneficial in the most improved practice, on soils of different sorts and qualities, being thus pointed out, it may be proper to take a concise view of the modes which are actually followed in the best grain districts of the country; as this may serve to guide the tillage farmer in many points and circumstances, which could not be otherwise noticed.

It is remarked by the secretary to the board of agriculture, in his excellent Survey of the County of Norfolk, that in that great corn district, the principles of cropping, which have been constantly attended to for a long time, are those of avoiding the taking of two corn crops in succession, and of making turnips the preparation for barley, and grasses that for wheat and other sorts of grain.

The courses usually had recourse to on sandy lands and turnip loams, are the following. But the writer previously states, that the first rye he met with in 1802 was on the farm of Mr. Bevan, which was raised after the culture of clofe for two successive years, which was eaten off by sheep. The rye was put in on one earth to the extent of thirty acres, fourteen of which were upon a black sand: and Mr. Bradford, his tenant, is stated to regularly pursue the course given below.

**Course.**

1 Turnips.
2 Barley.
3 Clover.
4 Wheat.
5 Peafe.
6 Turnips.
7 Wheat.
8 Barley.

By which in the fifth year, "the variation ceases, and it comes, as in the former, to turnips again. It is however added that to this system there are two great objections; in the fourth year the farmer has no summer food for sheep, and what is as bad, he doubles his quantity of turnips; he also loses wheat in the course. To have two successive years of vetches, appears to be a better system, and a much less interruption, or rather none at all. If the first vetches are to be fed, grass feeds might be sown with them for the second year, and this would save the expense of feed, vetches, and tillage, for that year. At Snetterton the course given below is employed by Mr. Fowell.

**Course.**

1 Turnips, drilled at 18 inches.
2 Barley ditto at nine.
3 Seeds.
4 Peafe, drilled at twelve inches, or wheat at nine, &c., and this is the course of the whole neighbourhood.

Wheat, pea, oats, or rye, the fifth year; if rye, a bastard fallow for it; the second year, feeds.

About Hingham the course is in general

1 Turnips.
2 Barley.
3 Clover.
4 Wheat.
5 Peafe.

And about Watton it is

1 Turnips.
2 Barley.
3 Clover.
4 Wheat.
5 Oats.
6 Peafe.
7 Wheat.
8 Barley.

And in one field near his farm yard, Mr. Blomfield, at Billingford, had 1 Winter ryes, and then turnips, 2 Barley.
And the crop always good; and Mr. Drake gets better turnips, after wheat, the stubble ploughed in, than after peafe. However, Mr. Wright of Stanhow never takes barley or peafe after wheat, though his soil is a good loamy fond; he thinks that no district where thus is the practice deserves the reputation of having the true Norfolk husbandry; while Mr. Drozé remarked, that upon the sandy land of Rudham, and that vicinity, the greatest improvement perhaps would be, to lay down for eight or ten years, to repose the land from turnips and corn, which would so frezen it as to render it productive perhaps in the style of the first breaking up; but common graffes wear out, and will not pay the present rents after two years; they sow trefoil and ray.

Sir Mordaunt Martin's course is a five shift:

1. Turnips.
2. Barley.
3. Clover.
5. Potatoes, mangel wurzel, or vetches, &c.
6. Turnips.
8. Trefoil and ray.

It is added that "Mr. Overman of Burnham has found, from many observations, that peafe do not succeed well if sown oftener than once in twelve years: where he has known them return in fix or eight years, they have never done well. He ploughed up a layer of four years, and drilled wheat upon it; then ploughed for winter tares; ploughed the stubble once for a second crop of wheat, which the writer viewed; a very fine produce, and as clean as a garden. Three crops of great profit, on only three ploughings, and yet the land kept perfectly clean. Not a little resulting from four years sheep feeding without folding from it.

His common course is

1. Turnips.
2. Barley.
4. Ditto.
5. Ditto.
7. Turnips.
10. Ditto.

But with the variation of having part of the twelfth under peafe on the three years layer, and also some tares. This course is partly founded on the experience of peafe not doing well, if sown oftener than once in twelve years."

And by Mr. Coke:

1. Turnips.
2. Barley, drilled at 6½ inches.
4. Ditto.
5. Wheat, drilled at 9 inches.
6. Turnips.
7. Barley, drilled at 6½ inches.
10. Peafe, drilled at 9 inches, or tares at 6 inches.
11. Wheat, drilled at 9 inches.

Mr. Purdis of Eggmore has a very uncommon variation from the general husbandry:

1. Turnips.
2. Barley.
4. Ditto.
5. Tares.

It is added, that "upon a large part of this fine farm the former course or rotation included a summer fallow, which afforded (broken at whatever time) little food for live-flock; tares now occupy the place, and support immense herds of cattle and sheep. What a noble spectacle, says the author, is this farm; 300 acres of turnips, 300 of barley, 600 of feeds, 300 of tares, and 300 of wheat; 1,500 acres arable, the crops luxuriant, much the greater part of the farm very clean, all of it except the layers, on which, however, are some thistles, too difficult to extirpate."

"But Mr. Thrupp, near Yarmouth, is in the four-shift, returning to turnips always after the wheat, for he thinks that nothing is so bad as taking a fifth crop." And at Caflor in Fleg, the land excellent, they are in the five-shift of East Norfolk; that is,

1. Turnips.
2. Barley.
3. Clover.
5. Barley;

with two variations practised sometimes by Mr. Evorit at the Hall farm:

1. Cole feed instead of turnips and barley.
2. Ditto.
3. Wheat.
4. Barley, but not a great crop, and then tares again.
5. The other is to substitute peafe instead of clover, followed by wheat, and then in the fourth shift, to come again to turnips."

But a remarkable circumstance in the rotation of crops here is, that spring corn will not succeed well after wheat, which follows cole feed; they will give an excellent summer fallow for this crop; spread 14 loads of fine dung per acre, and fowing wheat after the cole get the finest crops; yet if barley or oats follow, the produce is seldom tolerable; oats better than barley, but neither good.

By some farmers at Hemey, the courses or rotations are,

1. Turnips.
2. Barley.
3. Seeds, (clover once in 10 or 12 years.)
5. Peafe, or oats.

"It may easily, says the author, be supposed that the wheat of the fourth year is much better than that of the sixth. The course cannot be defended even on Hemey land, and the wheat stubbles were some of them not so clean as they ought to be."

And at Thrigby, Mr. Brown, &c. is, he says, in the Fleg five-shift; barley after the wheat, with the variation, to avoid clover every other round, of sowing half the barley with other feeds, and dibbling peafe on the other half.

But at South Waltham, Mr. Syble and others:

- Unworthy of Norfolk in any case whatever.

- 1 Turnips.
- 2 Barley.
- 3 Seeds, one or two years
- 4 Wheat.
- 5 Barley or oats.
- 6 Peafe.
- 7 Wheat.

The variation of the feeds is to prevent clover coming two round.
tions together, as the land here, as elsewhere, is sick of it. Upon a part white clover trefoil, and ray, are subtiluted, and left two years; about one third of the wheat is on a two years layer. If the clover be a good crop, the wheat is better than after the other feeds. The barley after wheat (if that followed a two year's lay) is better than after turnips. But Mr. Syble, if the land is foul after the first wheat, is sure then to take turnips. Sometimes peas on a two years lay, and then wheat; but he does not like peas, from their being so liable to failure. He is of opinion, the reporter says, that the husbandry of Fix and Blount takes variation, from having been kept too long in a regular course. One, wheat, has succeeded with him, is to sow barley after peas or vetches, in which way he has had great crops. It is added that at Repps and Marshaw the common Fix five-shift husbandry, that is, barley follows wheat, clover and other feeds alternately, and the wheat is as good after the one as the other; and at Luddham, the common five-shift. "But that at Catfield he found a variation; there the course is a fix-shift husbandry of

1 Turnips.
2 Barley.
3 Clover, &c.
4 Clover, &c.
5 Wheat.
6 Barley.

"It is also stated, that Mr. Cubitt practises this in common with his neighbours: the seeds sowed the second year before harvest, that is, re-seeded raftered, half ploughed: some failed: a clean earth as thin as possible; this management Mr. Thurtell repugnated for his soil; and what is singular, they seem to do it with equal reference to dibbling and broad-casting."

And Mr. Repton, at Oxnead, has been, from the year 1773, regularly in the six-shift husbandry of,

1 Turnips.
2 Barley.
3 Seeds, hay.
4 Seeds, olland.
5 Wheat.
6 Barley.

which is common throughout the county.

But Mr. Reeve, of Haverlingland, is in the five-shift; the

feeding two years: and with Mr. Bircham, at Hackford:

1 Turnips.
2 Barley.
3 Clover and other feeds alternately.
4 Clover and other feeds alternately.
5 Wheat.
6 Barley, oats, or peas.

"But, if the land be out of condition, the method to recover it is, to take,"

1 Turnips.
2 Barley.
3 Turnips.
4 Barley.

But Mr. Johnson, of Thurning, thinks, that the common course of

1 Turnips.
2 Barley.
3 Seeds two years.
4 Seeds.
5 Wheat.
6 Barley;

which is the usual item about him, would be improved by the following variation:

1 Turnips.
2 Barley.
3 Seeds.
4 Seeds.
5 Wheat.
6 Peas.
7 Wheat.
8 Barley.

"in which the land would have felt for feeding, three years in eight, instead of two in six, as in the other."

With Mr. England, at Bingham:

1 Turnips.
2 Barley.
3 Seeds.
4 Seeds.
5 Wheat.

"never adding barley after the wheat. Sometimes, on tender land, not equal to wheat, drills pea on the olland; and then, if the land be clean, takes barley, or even wheat; but not without rape-cake."

And Mr. Reeve of Wighton:

1 Turnips.
2 Barley.
3 Trefoil, white clover, and ray.
4 Ditto.
5 Wheat, drilled.
6 Turnips.
7 Barley.
8 Clover.
9 Wheat.

It is observed, that "every idea of this most accurate farmer merits much attention; and this course among the rest: whenever red clover is left a second year, it disappears, and the land is principally covered with ray-grafs; query if it is not much better when red clover is the object, never to leave it two years; this is an improvement in Mr. Reeve's intention; but it has not been his general practice." He mucked a barley-flubble for vetches; ploughed once for that crop; and then drilled wheat on one other ploughing. The flubble clean as a garden.

Mr. M. Hill has

1 Turnips.
2 Barley.
3 Seeds.
4 Seeds.
5 Wheat.
6 Turnips.
7 Barley.
8 Seeds.
9 Peas, or tarts.
10 Wheat.

It is likewise observed, that he has now (1801) on his farm, a very fine field of wheat, drilled on a flag of a four years layer: he remarked it, the reporter says, as an instance of confidence in his landlord (Mr. Coke), not to have broken it up sooner at the end of a leaf. The same farmer sows cole after winter vetches fed off; cats it off at Michaelmas; sows rye for spring feed; cats that off, and tills for turnips, getting four green crops, to feed, on the land in two years. This is excellent husbandry, says the writer of the report.

There are many other courses, or modes of cropping, detailed, but it is unnecessary to notice more of them in the present view.

In the county of Essex, as in most other tillage districts, the courses of crops are extremely various, according to soil and circumstances; there is, however, in some cases, a disposition in the farmers to too much following, which, probably, proceeds from the great desire which they have to keep
keep the land clean, a fallow, or fallow crop, being con-
sequently generally interposed between every two of white corn.

In the districts about Felpham, Great Waltham, and the
Knoedings, &c., on their cold strong loams, and poor loams
on white clay, the course commonly pursued is that of crop
and fallow, with some variations, by means of tares, clovers,
pease, beans. The crop and fallow thus:
1 Fallow, or 1 Fallow.
2 Wheat, — 2 Barley.
3 Fallow, — 3 Clover, pease, or beans.
4 Barley, — 4 Wheat.

But the following course is suggested as more proper:
1 Fallow.
2 Barley.
3 Clover.
4 Beans.
5 Wheat.
6 Tares.
7 Wheat.

applying the dung for beans.

On this, it is remarked, in the Agricultural Report of
the county, that the fallow for barley is their own practice;
that the clover is near enough to receive what benefit it has
to give; that the clover and manure would secure beans, and
afford an ample season for mucking, which is of much con-
sequence on such soil; that the wheat prepared for by the
double fallow of clover and beans would be good; while
winter tares tilled would leave sufficient time for the most
valuable fallow season, July, August, and September; of
course, little reasonable doubt could be entertained of the
seventh year.

In the coast district, on the fine impalpable and loams of Bradfield and Wicks, the course with Mr. Hardy is:
1 Fallow.
2 Barley.
3 Clover, red or white; generally red.
4 Wheat.
5 Beans.

When the clover mites, beans are substituted in its stead.
And on the turnips loams of the same fort, turnips are sub-
stituted instead of the fallow, except on about one-fifth,
which is under pease. On tilling the propriety of
wheat for a fifth year after beans, it was objected to from
the danger of the black grass, or mouse-tail, choking it,
as had often happened.
It is general, in all this part, never to put wheat in on a
fallow, but always barley or oats, as the wheat never suc-
ceded in this way. Beans have been tried on clover, and
the wheat after the beans, but not with much success,
merely from the bad effects of the black grass.

On land which is too heavy for the turnip culture, this
mode of cropping is pursued by Mr. Woodroffe at
Ramlay.
1 Fallow, or 1 Fallow.
2 Barley, — 2 Barley.
3 Clover, — 3 Beans or pease.
4 Wheat, — 4 Wheat.
5 Beans, — 5 Beans.

These five crops are only had recourse to in cafes where
the ground is in a good condition, from the use of manure.
The beans being well hoed and cleaned, it is considered good
husbandry to follow them, as a double cleaning is thus
given to the land, for though much is done by hoing, it
does not fully destroy either thistles or black grass; while
hand-weeding exterminates the latter completely.

This old five-course shift is thus varied, with good effects
by Mr. Blythe:
1 Fallow.
2 Barley.
3 Clover, white; and ray-grass for two or three years.
4 Wheat.
5 Beans.
6 Wheat.
7 Beans.
8 Wheat.

This is done, without injury, from the black grass. The
laying down two or three years, or as long as may suit the
object of live stock, is such a check to black grass, that much
of the success may depend upon it; but besides this, it
leaves the great expense incurred in the tillage in such
cases, and leaves the land greatly improved.

On remarkably fine mould, on a gravelly bottom, on the
level vale-land of Gold Hanger, close to the sea wall, the
course followed by Mr. Lee of Maldon, is this:
1 Turnips manured with 20 to 25 loads of dung, and
ploughed for eight times.
2 Oats, some barley.
3 Clover, red and trefoil: both manured and fed crops very
great.
4 Wheat; average four quarters.
5 Beans dibbled, six rows on an eight-furrow ridge, hoed
twice; produce four quarters and a half.
6 Wheat, 4 quarters.
7 Oats here much more advantageous than barley after the
turnips.

On fine sandy loam, Mr. Pattison of Maldon, on Spital
farm, follows this course:
1 Fallow.
2 Oats, six quarters, or barley five quarters.
3 Clover, red and mown.
4 Wheat, four quarters.
5 Beans, four quarters.
6 Wheat, three quarters and three fourths.

And at Burnham, on light land, Mr. Wakefield follows:
1 Turnips, fed by sheep.
2 Oats, or barley.
3 Clover.
4 Wheat.
5 Mazagan beans, or peas, well hoed three times.

And on his medium marsh-land, on which turnips cannot
be fed:
1 Cowpea feed.
2 Oats, (never barley).
3 Clover.
4 Wheat.
5 Beans of any sort, (pease never).

On a field of good land, Mr. Spurgeon’s practice was as
below, which is inferior, as removing “some steps the
use of repeated fallows,”
1 Fallow: soon after 70 loads an acre of chalk and
burnt compost.
2 Oats.
3 Clover manured, and none after.
4 Wheat.
5 Mazagan beans; the stubble well cut for.
6 Wheat.
7 Pease; the stubble well cut for.
8 Wheat.
9 Tares, well cut for.
10 Wheat; the stubble quite clean.

C. W. L.
CROPS.

And on land fit for turnips, near Rochford, Mr. Barrington pursues:
1 Turnips.
2 Oats, very little barley.
3 Clover; tares, pease, or beans, if a failure.
4 Wheat.
5 Oats.

But if good land,
6 Beans.

And when very good,
1 Wheat.

About Yeldham, where the soil is too heavy for turnips, the usual course is:
1 Fallow.
2 Barley.
3 Clover.
4 Wheat.
5 Oats.

and when the clover land is mucked for wheat, sometimes
6 Wheat.

Clover sown once in four or five years is, however, apt to fail; consequently, variations are formed by pease, beans, or tares, and clover does well once in eight years.

In some cases the course of,
1 Fallow.
2 Coleseed.
3 Wheat.

is pursued with success.

On turnip land at Layer de la Haye,
1 Turnips.
2 Barley or oats.
3 Clover.
4 Wheat.
5 Pease or oats.

At Chelstead, on loamy soils or gravel, while open field, the flock farms are thus cropped.
1 Turnips.
2 Barley.
3 Pease or oats, if pease.
4 Wheat.

When enclosed, changed to,
1 Turnips.
2 Barley.
3 Clover, by some trefoil.
4 Wheat, and by some
5 Tares.

At Boreley, the course pursued by Mr. Coker on different sorts of land, are these,

1 Fallow. 1 Turnips.
2 Barley. 2 Barley.
3 Clover. 3 Clover.
4 Wheat. 4 Wheat.
5 Beans or pease. 5 Pease.
6 Tares.
7 Oats.

But by changing red for white clover or trefoil one round, clover will then stand well.

In the practice of Mr. Sewell, at Maplestead, in the view of banning fallows, by strong as well as light lands, the following courses in one field have been successful for some years.

1791 Turnips mucked for and drawn.
1792 One ploughing for carrots for feed; crop 3½ cwt. per acre, at 63s.
1793 One ploughing for wheat, 18 bushels per acre.
1794 One ploughing for winter tares, mown green for foiling.

1795 Three ploughings for barley; fix quarters and a half.
1796 Clover, half-fed, half-mown; then all fed; 4 bushels per acre.
1797 Mucked for wheat, the fed and mown equal 3½ quarters.
1798 Windsor beans dibbled at 18 inches; three quarters.
1799 Wheat; twenty bushels.
1800 Pease; four quarters and a half.
1801 One ploughing for oats; fix quarters.
1802 Trefoil fed; badly got in; nine bushels at 20s.
1803 Wheat; twenty-two bushels.
1804 So much trefoil came up, that it was dunged and fed, but failed; only four bushels per acre.
1805 Windsor beans, oats and pease, fair crop.

Next year farmer follow,

And Mr. Springle follows.
1 Turnips, half drawn, half fed, in alternate ridges on dry land-fallow.
2 Barley, or oats, alternately.
3 Clover, red, white, or trefoil.
4 Wheat.

And when the land is in good order adds
5 Beans.
6 Wheat.

Wheat never sown on fallow, which is bad husbandry.

At Bocking, Mr. Savile follows.
1 Fallow or turnips, according to foil.
2 Barley.
3 Clover, the dung on the barley flutable.
4 Wheat.
5 Oats, by some, but here not allowed.

The variation where clover fails, is tares or pease.

He is stated as commencing an interesting variation, in that of the alternate system of corn and grafts. In which view, white clover, and ray grafs, have been sown for two or three years past, in one field each year, with coles fed for feeding by sheep, having twelve acres in the whole; the clover being a good crop, with a beautiful plant of the grafs amongst it, even where the thickest and highest. It is intended to feed or mow this grafs, for three, four, or five years, as circumstances may direct, and then to break it up with the expectation of good corn crops. It is suggested that he will not be disappointed, but that “the succs with ray demands close feeding and no mowing.”

And the same gentleman is stated as having another idea which has a tendency to lessen the expenses of fallows, and which promises in certain cases to be beneficial; it is that of ploughing the intended fallows as early as possible, and to harrow in clole, to be used as spring feed for sheep.

At Barking, with Mr. T. Pittman a common course is,
1 Potatoes.
2 Wheat.
3 Clover sown in April.
4 Wheat.

and then potatoes again, but with some variation, as that of putting them in on the clover, which is found to afford better crops than corn flutbles.

These are some of the courses which are practized in this extensive district, but various others are met with.

In the county of Hertford, where, on the clay and strong loams, the fallow system is still in practice, the following courses, Mr. Young says, are commonly in use about Sawbridgeworth.

1 Fallow.
2 Barley.
3 Clover.
4 Wheat.

Also,
CROPS.

Also, 1 Fallow.
2 Barley.
3 Peaxe.
4 Wheat.

And 1 Fallow.
2 Wheat.
3 Fallow.
4 Barley.

Many farmers purposing,
1 Fallow.
2 Wheat.
3 Fallow.
4 Barley.
5 Clover.
6 Oats.

"It is however observed, that whatever fault may be found and perhaps unjustly, with so much fallowing, it must be admitted that their crops are good."

On the authority of Mr. Byde of Ware Park, all the turnip land he knows in the country is slated to be managed in this manner.
1 Turnips.
2 Barley.
3 Clover, the first crop mown, the second fed.
4 Wheat, good farmers stopping here, and bad ones adding
5 Oats.

"And the turnips may be reckoned at 500. an acre; the barley three quarters, and the wheat 17 to 20 bushels." But the strong heavy soils are thus cropped:
1 Fallow.
2 Wheat.
3 Fallow.
4 Barley.
5 Clover.
6 Oats.

Varying the course thus:
1 Fallow.
2 Wheat.
3 Clover.
4 Barley.
5 Fallow.
6 Wheat.
7 Oats, peaxe, or beans.

An acre of wheat yields 25 bushels.

And on the same authority it is stated that about Watford there is a peculiar course of,
1 Fallow.
2 Beans, on which they put all the dressing.
3 Wheat.

And at little Haddon they have a course of,
1 Fallow, ploughed four times.
2 Wheat.
3 Fallow, four or five times ploughed.
4 Barley;

the only variation being, sometimnes
5 Clover.
6 Oats.

But Mr. Jones is, it is observed, decidedly of opinion, that the crop and fallow course is the most profitable. He affirms that beans will not succeed on this soil. The writer, however, says he knows they will on land exactly fuch in Suffolk, and give four quarters per acre.

About Wel mill the course is:
1 Fallow, ploughed four times.
2 Wheat.
3 Clover.

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4 Barley on three earths.
5 Peaxe.

But Mr. Whittington on light land cultivats,
1 Turnips.
2 Barley.
3 Clover.
4 Wheat; and if the land is in good order he adds, 5 Peaxe, or oats.

On clay land his course is,
1 Fallow.
2 Wheat.
3 Peaxe; or, 1 Fallow.
2 Barley.
3 Peaxe;
4 or 1 Fallow.
2 Wheat.
3 Clover.
4 Oats;

and this he reckons better than either of his former.

On proposing barley on a fallow with clover, and then beans and wheat he objected, that if clover is fown at the time of sowing barley, it gets so forward as to spoil the crop; and if fown at rolling, it is apt to fail. This the writer, however, cannot admit to be fair reasoning in a country where it is common to sow clover on wheat in the spring, and even to late as May and July.

On much of the poor hungry gravel in the open fields near Hatfield, let at 7s. per acre, the course is,
1 Fallow.
2 Wheat, producing two or three loads (five bushels). 3 Oats, producing 4½ or three quarters.

On better land they cultivate,
1 Turnips, sheep fed.
2 Barley; four quarters are produced on an average.
3 Clover twice mown, two loads are grown.
4 Wheat, 22 bushels are reaped.
5 Oats, or peaex.

This is the course of Mr Cassmajoar, at North Mimms:
But his course on wet land is,
1 Summer follow.
2 Barley, four quarters are grown.
3 Clover, twice mown, and 2½ loads at the two are grown.
4 Wheat, four or five loads are reaped.
5 Oats, peaex, or beans; three to four quarters of either are the amount of the produce.

"But the last crop in either cafe is only taken when the land is in high order." It is stated, that in this "there is a proof of the impropriety of the question, whether clover may safely be fown with barley on land in high order; the print on which the objection to clover fown with barley on land followd is founded." It is observed that Mr. Leach follows the under mentioned course.

1 Turnips.
2 Barley.
3 Clover.
4 Wheat.
5 Oats, or peaex.

Then they return to turnips on fome land; but on about 40 acres of gravel, he fows,
1 Turnips.
2 Barley.
3 Trifolium, white clover, ray grafs, common clover fed.
4 Ditto, fed.
5 Ditto, fed.

3 K 6 Oats.
CROPS.

6 Oats, on one earth.
7 Three earths are given immediately after oats, and then wheat is sown.
8 Winter fallow for barley.
9 Graffs, as before, for three years: and then the land is cultivated as above. Thus, says the writer, these 40 acres neither want nor have any manure more than they receive from the feeding of the sheep on them, and from 60 bushels of ashes per acre, spread the first year on the grasses only, and 30 bushels of foot per acre on the wheat. It has answered greatly for 18 years to his full satisfaction. He made it a rule to feed his land as bare as possible, and always wishes not to let the ray run to bent.

And it is observed, that lady Melbourne has a field, which has been thus managed.
1 Potatoes were planted on it and well manured, and the produce amounted to 400 bushels per acre.
2 Wheat was drilled on it, at the distance of nine inches. The crop amounted to seven loads, or 35 bushels per acre.
3 Winter tares were next sown, for which 12l. an acre were paid this year (1803) offered; but they were mown for foiling; and at present the turnips after them are good.
4 Barley will be drilled next spring, as the fourth crop.

"Mr. Young of Hurlal, who farms on a large scale, with much intelligence, pursues the common course of taking oats or peas after wheat. It is extraordinary, says the author, to see how general this practice is; but if the clover is at all foul, he passes over this crop and follows turnips. The same course holds to St. Albans, and he found it steady on the fine farm of 483 acres, of Mr. Clarke, at Sandrigby." But Mr. Biggs, near that town, omits the oats over wheat, returning to fallow for turnips, instead of an after crop, except on 20 acres nearly in a year, which he sows with peas.

Tares he sow on the wheat stubble, and grows good turnips the same year. On his heavier land, of which he has not much, his course of crops is:

1 Fallow.
2 Barley.
3 Pease.
4 Fallow.
5 Wheat.
6 Beans.

And that "the common Hertfordshire course of 1 turnips, 2 barley, 3 clover, 4 wheat, 5 oats, continues about Watford, Rickmanworth, and all around Berkhamsted and Hemplst." But Mr. Jennings of the latter place, has a course,

1 Fallow.
2 Wheat.
3 Pease, drilled.
4 Barley.
5 Clover.
6 Wheat, but not in general, only as a variation from his common course.

It is noted, that "Mr. Cotton, of the same place, observed, in defiance of the common practice of taking oats after wheat, that they are the black oat, which, according to his opinion, succeeds best in land held together by roots, though of weeds which will yield better than land in tillage, though clean; and this makes a bad manager in many cases, obtain a better crop of black oats than a good farmer who would produce on the same land."

"The old course continues in Beechwood and Market-street; whereas, if clover fails, they sow pease, followed either by turnips or summer fallow. They sow winter tares after wheat, three bushels per acre. They use them for feeding and fallowing, and then fallow for turnips, or give a barley fallow for wheat; but the crop is not so good as on clover."

Round Hitchin, in every direction, the old course of five shifts is continued; it is, however, varied by a few, by,

1 Turnips.
2 Barley.
3 Clover.
4 Wheat.

And by some a sixth shift of oats is added.

In the open land they follow a course of
1 Fallow.
2 Wheat or barley.
3 Oats or pease.

But sometimes few turnips, by agreement, on the fallow.

"Mr. Sedgwick, of Rickmanworth, on rocky land, pursues a course of,
1 Fallow.
2 Wheat.
3 Oats or pease.

On dry land this is the common course, but often turnips are sown after wheat. If a field grows so tired of clover as to want a change, their course is then, or
1 Turnips.
2 Wheat.
3 Barley, or pease, or oats.
4 Turnips.
5 Barley.
6 Clover.
7 Wheat.
8 Oats.

And Mr. Parker, at Munden, sows
1 Turnips.
2 Barley.
3 Clover.
4 Wheat.

Upon which "he remarks, that by this course the land is favoured, as oats never follow wheat. If dung should run short, and a farmer not have it in his power to manure all his turnips, he may venture to sow a field of turnips without dunging, and succeed; a practice by no means to be depended on in the common rotation of taking oats after wheat. In order to favour the land, he has occasionally omitted sowing the clover, and taken pease for one season; but he suffers in his wheat; so that he fearfully knows what to do in the awkward circumstance of the failure of clover."

"And when clover fails at King's Langley, some farmers sow pease, others (but this is not common) fallow for wheat, and then take oats;" and the earl of Essex fows near his farm-yard,

1 Tares, and then turnips.
2 Barley.
3 Clover.
4 Wheat.

And Mr. Young "saw at Calthorpe very fine turnips after tares used in foiling, though sown twice and three times. This course affords, he says, much provender for the yard, in tares and clover for foiling, and turnips for feeding. In other parts of the farm, oats follow wheat."

But at Cheviot they sow
1 Turnips.
2 Wheat.
3 Clover.
4 Wheat.
C A R L O C A K E.

Also,

1. Fallows.
2. Wheat.
3. Oats, peas, or beans.

On the clays of Albury, Felthams, &c. their course of crops is,

1. Fallows.
2. Wheat.
3. Oats.

Some courses consist of, 1. Fallow; 2. Wheat; 3. Fallow; 4. Barley; clover is also added with wheat; and oats and barley sometimes. They feed their clover in the spring, and then give a bastard fallow for wheat or barley. In the extensive open fields about Barkway, the writer finds the rotations to be,

1. Fallow.
2. Wheat.
3. Oats.
4. Fallow.
5. Barley.
6. Pea.

The same in the open fields (and all are open) about Royton. There are no inclosures, he says, in the parish, except small patches, quite in or near the town. And Mr. Fother, of Royton, practices a husbandry which long ago the writer publicly recommended; not that he took it from that recommendation, but his practice has confirmed it.

Common Course.  Mr. Fother's Course.

1. Fallow.  1. Fallow.
3. Oats.  3. Clover and trefoil.

It is noted that the "seeds are sown on the wheat in March. The first year he tops them in May, and then mows the ground for hay or feed. The second year, the flock-mutter feeds them with the rest of the fields; but the grass entices the sheep to the spot, and dresses it consequently better than other parts, and his following wheat has always been much superior to that fallowed; even to the degree of beating that on which 3l. 4s. per acre have been bestowed in dressing: a clear proof that so much following is a real injury to the land. Besides this, he keeps two horses in eight fewer than before he practised this husbandry." But Mr. Dodo of Bygrave is in the Norfolk four-shot course, leaving out the oats taken to commonly in Kent in Hertfordshire. If clover fails, he grows turnips; and if turnips fail, carries on the fallow for barley. This is excellent husbandry, the writer says.

However, round Baldock, generally, but with some exceptions, oats are taken after the wheat. And Mr. Smith of Cloth-hall, has a course of,

1. Fallow.
2. Wheat.
3. Clover.
4. Oats or barley.

And the four shot turnip course.

In the open field he finds,

1. Fallow.
2. Barley.
3. Pease.
4. Fallow.
5. Wheat.
6. Oats: this by agreement.

And in the open field near Baldock, he finds another course by a singular agreement.

1. Turnips.
2. Barley.
4. Clover; which the parish flock-mutter eats till the last Thursday in May; then removes his sheep, and the farmer lets it land for feed.
5. Wheat.
6. Oats.

It is suggested by the writer, that the practice in these courses, of commonly taking a crop of oats after the clover land wheat, is incorrect in a very high degree. "It is, he says, in putting in a corn crop the fourth from the fallow, for though ever is certainly to be esteemed a fallow respecting manure, yet, in that of cleaning land, it is by no means powerful. If there is any cough in land, it is sure to increase, very considerably while the land rolls from tillage. This circumstance makes it such ill husbandry to leave broad clover a second year. To sow wheat on one ploughing, which can destroy no root-weeds, and then to put in a second crop of corn, malt, in the nature of things, he supposes, be injurious by encouraging weeds. But what is the motive, he asks, for this conduct? Those who say that the land will bear it, simply assert that profit is thus to be gained, provided the land be kept in heart. He could never, he says, understand this, nor upon what principles the idea can be founded; and in order to place the question in the clearest light, it appears to him that nothing more can be necessary than to contrast the two courses for any given number of years."

And upon the courses in the clay district, where the fallow is taken, he remarks, that "great crops are gained in favourable years, is, an undeniable fact. But great as these expenses are, these exertions are little or no leakiness against bad leasons, which form a very material deduction from their profit. That husbandry, upon the long run, will be most beneficial which is calculated by a variation of crops to be advantageous with a moderate produce. When a year's fallow and manuring are given to one crop, a moderate produce will not be a profitable return: if the farmer has not a great success, he has lots, and consequently his hazard is considerable. The course he wishes to see tried effectually is this:

1. Fallow, in partial compliance, not with his, but with the opinion of others.
2. Barley.
3. Clover.
5. Wheat.

"All the manure should, he says, be laid for the beans. The fallow will secure barley. The clover will give good beans; and the beans, if well cultivated, are sure to give good wheat." He adds, that "in answer to this, he has been told, that beans will not do in this county; that they have been tried and failed. The trials made have, he says, been broadcast, and therefore no rule whatever. They should be dibbled in double rows; that is, two furrows dibbled, a row on each, and then two or three furrows (according to soil and circumstances) should be missed, and the others dibbled, and so on; the intervals should also be well hoed-hoed; the rows must be hand-hoed and woveed, and the whole kept clean like a garden. The soil is, he says, unquestionably well calculated for this crop; for similar land produces great beans in other counties, and therefore if well managed would do the same here. When beans are compared with fallow, let the consumption of the straw be considered, which yields excellent dung; let that dung be carried to the field, in addition to the quantity the land receives in the present
C R O P S.

4 Barley.
5 Clover, which is dunged on the stubble.
6 Oats.
7 Beans drilled.
8 Wheat.

It is added, that, in "this course, the land is dunged twice, though not very heavily, a practice that is found to be very beneficial. Beans and wheat alternately are sometimes taken on such foils, but much manure is necessary, where a syllem of this kind is executed."

And another course on this sort of soil is:
1 Fallow, dunged.
2 Wheat with grass-seeds.
3 Paflure, eaten by sheep.
4 Oats.
5 Beans, or a mixture of beans and peas drilled.
6 Wheat or oats.

It is stated "that the above is a rotation of six, with only one manuring, but the quantity applied is generally greater than in the foregoing rotation, and the paflure being the second after the fallow, and fed off with sheep, compensates in some degree, for the want of dung."

A rotation is sometimes followed on the belt clays, such as is marked in the first claps of the above.

And on thin clays:
1 Fallow without dung.
2 Oats with grass-seeds, or if the fallow was dunged, wheat.
3 Paflure.
4 Oats.
5 Beans, dunged.
6 Wheat.

After which the fallow is repeated, and the course returns.

On the poorest of these clays, the course commonly followed, is:
1 Fallow, dunged.
2 Barley, sometimes oats, with grass-seeds.
3 Clover.
4 Oats.

It is here fuggelled, that, "on the coast, a considerable portion of what was formerly link grounds, covered with bents and other herbage of small value, is now brought under the plough, and profitably employed in raising useful crops." That description of soil is for the most part under a rotation of four, as follows:
1 Turnips with dung, or sea ware.
2 Rye or barley, with grass-seeds.
3 Clover cut for hay, or paflured.
4 Oats, manured on the clover ley.

It is noticed, that the "great bar to the improvement of these sandy soils, arises from the risk to which they are exposed of being blown by high winds, a circumstance which frequently happens, and by which the crops, both of turnips and barley, are often greatly injured, and sometimes entirely lost." A remedy, the writer says, "has lately been fuggelled and put in practice, for that evil which bids fair to be attended with benefit. The method during which the greatest mischief happens from blowing, is the latter part of the spring, and beginning of summer, and the winds by which the blowing is occasioned, are generally from the west and south; to prevent this mischief, to barley and turnips crops, it is proposed to keep barley out of the rotation, and substitute rye in its place, that the ridges of the field shall run in a direction from north to south, and that the three wettarnecl ridges shall be sown with rye before winter, leaving the three ridges immediately adjoining for turnips, sowing again the
CROPS.

The three next ridges with rye, and so on, having alternately three ridges of each over the whole field. Where this is practiced, the rye, by the time the turnips are sown, has made considerable progress, and from the circumference of the fides of the ridges being opposed to the wind, breaks its force so much, as to prevent it from hurting the turnips. Perhaps alternate ridges of rye and turnips would answer the purpose of shelter more completely, but as some lots would arise from treading the rye in the working of the turnips, and as the latter, if the rye grew to any great height, would suffer from the want of a due proportion of the light and air, two or three ridges appear to be the proper breadth.

The above is considered as the rotation or course generally followed, on the different soils of the middle districts, and coast lands; upon the deep and well sheltered soils in the uplands, it is not materially different, except that winter wheat is sowed late, and spring wheat not at all; for the generality of that district, however, which is a dry gravelly loam, the rotation principally followed is one of four shifts:

1. Turnips with dung.
2. Barley or oats.
3. Clover.
4. Oats.

"But upon heath lands, broken up by a two years fallow, the rotation is generally different from any of the above. Where the soil of these lands is, however, deep, the above rotation is followed; but when the situation is elevated, and the soil thin, as is often the case, the most common rotation is as under."

1. Oats.
2. Clover.
3. Pasture.

It is suggested, that, "in this last, the land is permitted to remain for a number of years." But that, "in some cases the syltem is different; the second year of the fallow, and after the lime is wrought into, turnips are sown, and eaten off with sheep, oats are sown in the spring with grass, and the land afterwards paired. The fall is unquestionably the most profitable rotation, as along with the value of the turnip crop, which in some cases may be considerable, the land is manured, and has its parts consolidated, by the treading of sheep; this last is a circumstance of great importance to soils of a loamy texture, as these frequently are."

And it is supposed by "some good farmers, that the rotation upon these new broken uplands, may be lengthened by taking a second crop of oats, after the clover, and again sowing down with grasses-feeds. It is believed that on some of the best of these lands, that may be done with advantage; but if the soil be thin, and contain few useful principles, the experiment is dangerous, as there is a risk of rendering it useless for the future."

These details of the courses, which are pursued in cropping lands in these great grains districts, clearly prove that much remains still to be done in this way, before the greatest possible advantages can be derived from the cultivation of the soil.

Having thus explained the principles on which the systems of cropping land should be conducted, the courses of crops which are best suited to different circumstances and sorts of soil, and the systems of cropping, which are commonly pursued in the belt corn districts of the kingdom, it may be proper to state the usual distribution of crops on farms of different descriptions. It is not however an easy matter to state with exactness the proportions of crops of different sorts, that may be the most suitable and advantageous on farms of different sorts and sizes under the arable or other systems, as much must always depend on soil, climate, and situation in so far as marks are concerned, as well as the sort of cultivation which is practiced, and other circumstances which relate to the peculiar nature of the farm itself.

It has been stated that the governing principles in this sort of arrangements should be, "that the extent of land, in the state of natural and artificial grass, be fully adequate to the support of such a number of live stock of different kinds, as may be sufficient to supply such a proportion of manure as is necessary for keeping the portion of ground under grain root, green, or other crops, in the most perfect heart and order.

Hence the space of ground to be conducted under grain, root, green, and other arable crops, must constantly be proportioned to the quantity of manure that can be raised by the keeping of different sorts of domestic animals, while the number of the lat must be regulated by the amount of the food that can be procured from the grass and green cattle crops which can be cultivated and preferred for their use during the winter season. As without considerable attention to these different circumstances, it must be impossible, it is supposed, except near large towns, where manures can be obtained at a reasonable rate, to cultivate land to the greatest advantage."

The proportionate distribution of crops on a farm of 150 acres, 60 of which were dry turnip land, and the other part a mixture of clay with gravel lying on a wet bottom; being situated on the best cultivated portion of the West Riding of Yorkshire.

<table>
<thead>
<tr>
<th>Distribution of Crops</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>30</td>
</tr>
<tr>
<td>Barley</td>
<td>20</td>
</tr>
<tr>
<td>Oats</td>
<td>14</td>
</tr>
<tr>
<td>Meadow grass</td>
<td>7</td>
</tr>
<tr>
<td>Red clover</td>
<td>14</td>
</tr>
<tr>
<td>Clover</td>
<td>45</td>
</tr>
<tr>
<td>Summer fallow and turnips</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>150</td>
</tr>
</tbody>
</table>

On another farm in the western part of the same district, of the extent of 80 acres, customary measure of 7840 square yards, under the grazing and dairying systems.

Annual distribution of the Crops.

3½ acres of oats.
1½ acre of barley.
21 acres of meadow, cut for hay.
20 acres palled with feeding cattle.
30 acres palled with milch cows, young cattle and horses.

But it is suggested, that the proportion of grain is here made too small, even under such systems of management.

And upon a farm in the centre of the Riding; the soil of which is red gleet and water shaken, incumbent on clay.

The extent 200 statute acres, under the arable syltem.

Annual distribution of the Crops.

43 acres wheat
being 15 acres after fallow,
15 acres after clover ley,
13 acres after oats.
The quantity of seed sown from 2½ to 3 bushels per acre.

- 1.5 acres barley, after fallow; 5½ to 7 bushels sown per acre.
- 18 acres after oats; 5 bushels seed per acre.
- 14 acres beans and peas; 3 to 4 bushels seed per acre.
- 70 acres pasture and meadow.
- 16 acres clover.
- 31 acres summer fallow.

On a farm on a dry gravelly soil, the extent 78 statute acres, restricted to ploughing more than 40 acres.

Annual distribution of the Crops.

- 18 acres wheat.
- 8 acres potatoes.
- 6 acres oats.
- 8 acres peas, cabbages, &c.
- 27 acres pasture grass.
- 11 meadow land.

78

And on a farm where the soil was limestone, clay and moor, the extent of which was 139 statute acres.

Annual distribution of the Crops.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>23</td>
</tr>
<tr>
<td>Barley</td>
<td>7</td>
</tr>
<tr>
<td>Oats</td>
<td>12</td>
</tr>
<tr>
<td>Beans</td>
<td>20</td>
</tr>
<tr>
<td>Meadow</td>
<td>47</td>
</tr>
<tr>
<td>Fallow</td>
<td></td>
</tr>
</tbody>
</table>

139

On a farm of the extent of 116 statute acres, the soil lime flone and clay:

Annual distribution of the Crops.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>22</td>
</tr>
<tr>
<td>Barley</td>
<td>9</td>
</tr>
<tr>
<td>Oats</td>
<td>8</td>
</tr>
<tr>
<td>Beans</td>
<td>5</td>
</tr>
<tr>
<td>Meadow</td>
<td>10</td>
</tr>
<tr>
<td>Fallow</td>
<td>13</td>
</tr>
<tr>
<td>Pasture</td>
<td>49</td>
</tr>
</tbody>
</table>

116

The distributions of crops on different sorts of land in the northern part of the same county, are in this way:

On a farm of 100 acres of light soil.

Annually:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>In corn</td>
<td>40</td>
</tr>
<tr>
<td>In turnips</td>
<td>20</td>
</tr>
<tr>
<td>In temporary graze ley</td>
<td>30</td>
</tr>
<tr>
<td>In clover</td>
<td>10</td>
</tr>
</tbody>
</table>

Total 100

And on another farm of 120 acres of heavy soil.

Annually:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>In white corn</td>
<td>30</td>
</tr>
<tr>
<td>In Beans</td>
<td>10</td>
</tr>
<tr>
<td>In clover or pease</td>
<td>10</td>
</tr>
<tr>
<td>In green fallow crops</td>
<td>10</td>
</tr>
<tr>
<td>In grass</td>
<td>62</td>
</tr>
</tbody>
</table>

Total 120

For a farm of 200 acres, managed under the convertible system, or that of alternately grain and grass, being continued only three years under the plough, and then laid down to grass, one, two, or a greater number of years, according to circumstances.

Distribution of the Crops.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under different sorts of grass</td>
<td>110</td>
</tr>
<tr>
<td>Under fallow crops</td>
<td>30</td>
</tr>
<tr>
<td>Under grain crops</td>
<td>60</td>
</tr>
</tbody>
</table>

200

Or, Annually thus:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under the rate of old turf or frowd</td>
<td>20</td>
</tr>
<tr>
<td>Under different artificial grasses, as clover, lucern, faintyffin, &amp;c.</td>
<td>10</td>
</tr>
<tr>
<td>Under irrigation, or the rate of preserved grass</td>
<td>-</td>
</tr>
<tr>
<td>Under different sorts of fallow crops</td>
<td>5</td>
</tr>
<tr>
<td>Under wheat and barley after different fallow crops</td>
<td>50</td>
</tr>
<tr>
<td>Crops of different grasses 1st year</td>
<td>25</td>
</tr>
<tr>
<td>Crops of ditto. 2d year</td>
<td>25</td>
</tr>
<tr>
<td>Crops of ditto. 3d year</td>
<td>30</td>
</tr>
<tr>
<td>Under oat and other grain crops</td>
<td>30</td>
</tr>
</tbody>
</table>

200

Crops. Course of, in Gardening, is the method of putting in or cultivating culinary vegetables, so as that the soil and state of the ground may be the most suitable to the nature of the plant, herb, or root, and at the same time be the best preferred from being injured by the exhausting properties of the crops.

From the general richness of garden-ground, and much manure being constantly employed in the raising of crops on them, much of his attention has perhaps been paid to the courses of cropping in the garden than in the field. It is, however, equally necessary in this case as in that and the same principles are equally applicable.

A variety of circumstances, however, conspire to prevent its being so effectually accomplished in the garden as in the farm; as the smallness of the portions of ground generally allotted to this use, the vast number of articles which are to be grown, and their great similarity and relation to each other. It has, notwithstanding, been suggested by Mr. Nicol that they may be classed in the following manner, with much propriety and advantage.

1 Broccoli, cabbage, cauliflower, and savoys.
2 Common beans, French beans, and pease.
3 Carrots, beets, and perhaps.
4 Turnips, early potatoes, onions, leeks, shallots, &c.
5 Cellery, endive, lettuce, &c. &c.
It is found in practice that cellarry constitutes an excellent preparation for asparagus, onions, and cauliflowers.

Turnips or potatoes are a good preparation for cabbages or greens.

Broccoli or cabbages are a proper preparation for beans or peas.

Cauliflowers prepare well, for onions, leeks, or turnips.

Old asparagus land affords a good preparation for potatoes or carrots.

The strawberry, currant, gooseberry, and raspberry for the same.

Turnips give a suitable preparation for cellarly, or endive.

And peafl, when well manured for, are a good preparation for spinach, &c.

It is recommended by the writer mentioned above, that in all cases a studied course should be had recourse to, so that no crops of the same class or kind may immediately follow each other. In order to accomplish which in the most perfect manner, the garden should be divided with regularity into quarters, and numbered, a journal being kept for the purpose of entering everything which regards the manner of cropping, manuring, trenching, digging, ridging up, and following of each of them, in the manner below.

No. 1.

1793. Subtrenched after asparagus without manure for carrots.

1794. Winter followed, planted with early cauliflowers with moderate dunging, 2d May.

1794. Winter followed sowed with yellow turnips, with compost dressing, 20th July.

1795. Dig over lightly for sowing onions without manure, 8th February.

1795. Dig over deeply for planting cabbages with light dunging, 5th October.

1796. Dig over lightly for setting Charleton peas without manure, for a late crop, 20th June.

1796. Trenched three spits deep in December, winter followed.

1797. Dig deep, to be set with early potatoes, with moderate dunging, 20th March.

1797. Dig common depth, for German greens, without manure, 16th September.

1797. Dig common depth, intended for leeks in June next.

The other numbers of the different compartments or divisions should be managed in the same way.

It is likewise remarked that it is becoming a practice with market gardeners to crop a portion of their ground every season with some sort of grain or grass, which, besides being found highly useful for their cattle, is of vast benefit to their ground. After being laid down a year or two with some sort of the latter kind of crop, the ground is found to be capable of again growing good food for or kitchen vegetables.

Cropping, in Agriculture, the operation or process of putting different sorts of field crops into the ground. In performing this business to the most advantage, various circumstances are necessary to be taken into consideration, such as the season, and the nature, flate, and preparation of the land, as well as the nature, quality, and quantity of the food. By properly attending to all these particular points of management, crops of almost all descriptions may be put into the soil, so as to succeed with much greater certainty, and in a much more perfect manner than is usual in the ordinary methods of putting them into the ground.

Cropping, in Gardening, the practice of committing the various culinary and other garden crops to the soil. In this
CROISIER, in AFRICANITY, four stars in form of a cross; by Jepheron, those who fail in the southern hemisphere find the antarctic pole.

CROSNE, in Geography, a town of Poland, in the province of Lemberg; 50 miles W.S.W. of Lemberg.

CROSNIER, a small island in the Atlantic Ocean, on the coast of France, of about six miles in circuit, near the island of Nois Montier, which is considered as a part of the department of the Vendee. It was gained by the French, in 1767, by means of dikes, which on a small scale represent the famous dikes of Holland. The soil is uncommonly fertile, and well cultivated. There is but one commune or parish in the whole island.

CROSNO, CROSON, or KROSA, a small town of Austria, in Galicia or Austrian Poland, which carries on a good trade, chiefly in wine and other commodities of Hungary.

CROSS, THOMAS, in Biography, an English engraver of the 17th century, by whom we have, amongst others, the following portraits, executed in a poor, laboured style: Jeremiah Burroughs, 1648. James Burroughs, theol. 1648. John Richardson, bishop of Armagh, 1654. He also engraved the frontispiece to White's Rich Cabinet, 1684. Walpole, Heinecken.

Cross, CROIX, a sort of instrument, composed of two pieces of wood, traversing and cutting each other, ordinarily at right angles. Such being the form of the cross, the body of the criminal was fastened by nailing the feet to the upright part, and the hands on each side to the transverse piece.

Penion derives the word cross from the Celtic cros, and crosa; though, perhaps, crosa and crosa might with as much justice be derived from crosa. The cross was used amongst the ancients as an instrument of punishment for malefactors, and particularly slaves; and was planted at several places, in terrae, as our gallows, &c.

The death of the cross was, both on account of the shame and pain of it, the most dreadful of any; so that it was inflicted on the vilest criminals.

Sozomen observes, that it was Constance who by law first abolished the punishment of the cross, which had obtained among the Romans till his time. It had also been in use among the Assyrians, Egyptians, Persians, Carthaginians, and even the Greeks. The Jews pretend that they inflicted the punishment of crucifixion upon no perfons whilst he was alive; but that, having first put them to death in some other way, they then fastened them to the cross either by the hands or neck. But instances occur of their frequently crucifying persons that were alive. See 2 Sam. ii. 23.

Constance was induced to abolish crucifixion by his respect for the crosses of Christ. He would not suffer the instrument of our Salvation to be thus disfigured, and rendered an object of aversion and horror, and he thought it indecent and irreligious, that the crosses should be used for the punishment of the vilest offenders, whilst he himself erected it as a trophy, and adored it the noblest ornament of his diadem and military standards. Although the text of this law is not preferred, the fact is ascertained both by Pagan and Christian writers. (Fid. Aurel. Vict. and Sozomen.) Influenced by the same religious sentiment, he prohibited the breaking of the legs of criminals, which was a punishment often annexed to that of the cross, as appears from the example of the two thieves crucified with Christ. The circumstance in which Constance's peculiar veneration for the cross originated is related by Eusebius (De Vita Cont. lib. i. c. 27, 28, 29, 30.) in the following manner.—This writer represents the emperor as deliberating, and determining what God he should worship when he was undertaking the war with Maxentius, or, however, before he had finishecl it; which was begun in 311, when Constance was considerably above 30 years of age. Weighting, says Eusebius, in his mind the misfortunes of those who had worshipped idols, he made choice of the Christian religion; and considering...
dering with himself, that he wanted some better assistant than military forces, he sought for a God that might be his helper. In consequence of his deliberation on this subject, he was convinced, that it was the utmost folly so far to strive as to pay honour to such gods as were mere nullities; and he therefore resolved to worship only the God of his father. Eusebius proceeds in the following words: "He therefore called upon this God in his prayers, earnestly intreating and begging him, that he would make himself known to him, and afford him his powerful aid in the difficult affair before him. Whilst the emperor was putting up these earnest prayers and supplications, a divine sign (σήμερον) of a most wonderful nature appeared; which thing, possibly, if related by another, would not be easily credited. But the victorious emperor himself having told it to us, who wrote this history a long time after, when we had the honour of his acquaintance and conversation, and having likewise confirmed it with an oath, who can refuse his attest to it, especially when following events have borne testimony to the truth of it? He said then, that about noon, when the day was declining, he saw with his own eyes in the heavens, the trophy of the cross, placed above the sun, consisting of light, with an inscription annexed, πάντοκρατόρ. By this conqueror; that at the sight of it, astonishment seized him and his whole army, which then followed him in a certain march, and beheld that wonderful light." "In the mean time," as he said, "he began to doubt with himself, what the meaning of this should be; but whilst he was revolving in his mind, and continued meditating upon it, at length night came on. As he slept, the Christ of God appeared to him with that sign which had appeared in the heavens; and commanded him to make a standard resembling the sign, which he had seen in the heavens, and to use it as a defence, in the battle with his enemies." "As soon as it was day, he arose, and communed with this wonderful thing to his friends. And then sending for such as worked in gold and precious stones, he seated himself in the midst of them, and gave them a description of the sign, and commanded them to make one like it in gold and precious stones, which we have also seen." Eusebius afterwards describes the standard. In a crown of gold at the top of the cross was a figure, consisting of the two first letters of the name of Christ, according to the Greek orthography.

This figure on some medals, is formed thus ΧΡ, in others thus ΧΡ, and the standard thus marked is called λεβρασμ, which see. When the troops in any part of the army began to give way, the emperor caused the standard with the cross to be conveyed thither; and his faith, says Eusebius, was rewarded with victory, which began on that side where the greatest danger was apprehended.

The appearance of the luminous cross in the heavens is altogether denied by some, who call it a delusion, a stratagem, a political device of Constantine, to animate his soldiers, and to engage the Christians firmly on his side. By some it was regarded as a pious fraud. This opinion, as Fabricius affirms us (Apud Bib. Grec. l. v. c. 3. t. vi. p. 8. &c.), has been fully considered and confuted by Jo. Chr. Wolffius. By others, more generally, the cross, which is said to have been seen by Constantine in the heavens, is reckoned not only a reality, but a miracle. Fabricius (uti supra) allows and contends for the reality of it, but does not think it properly miraculous. He fuggetts, that it was a solar halo, which is a well known phenomenon; and in order to account for the inscription, πάντοκρατόρ, he fuggetts, that τούτος in Eusebius's relation, means a picture, as well as a writing, and that τέλος, when applied to a picture or image, means to denote or imply, and that the words of Constantine and Eusebius may be thus interpreted: to the cross was adjointed a picture or image, intimating that by this he should conquer; which image was a lucid crown, a representation or symbol of victory. In confirmation of this solution, it has been alleged, that Eusebius, by not using the words τούτος, or τοιχομακρ, nor mentioning in what language it was written, seems to speak rather of an emblem or picture, than of a writing. Besides, in the standard which Constantine ordered to be made in form of a cross, in memory of thisomen, he placed a crown of gold and jewels on the top of it, and a cypher denoting the name of Christ, but not the words τούτος, τέλος. We shall here submit some pertinent and judicious remarks that have been made on this history of Eusebius by Dr. Lardner. (Works, vol. iv. p. 152. &c.) 1. This relation is delivered by Eusebius upon the sole credit of Constantine; whereas a thing so public a nature could not have rested upon his credit and authority only, if it had been true. Other witnesses might have been called to vouch for the truth of an event, so surprising, and so recent; i.e. 20 years before Eusebius wrote the life of Constantine, and the historian, from dutiful affection for the emperor, and from a just concern for his own honour, would not have failed to add something to this purpose. 2. The oath or oaths of Constantine upon this occasion, rather bring his relation into suspicion. 3. Eusebius renders this whole account miraculous, by not mentioning the place of this wonderful light; and this defect renders it probable, in Dr. Lardner's judgment, that Eusebius himself did not believe this story, nor intend to vouch for the truth of it. 4. There are other things concerning the standard related by Eusebius, which he also had from Constantine, and which are very unlikely, if not altogether incredible. Wherever the standard was, says the historian, the enemies fled; and this is not improbable, because it might animate Constantine's soldiers, and terrify the enemy. But it is added, that the halitary trophy was a safeguard to him who bore it, and there never was any one wounded in this service. This relation, for which Eusebius does not make himself answerable, surpasses all credible accounts of miracles; that when many darts were thrown, none should strike the bearer, nor yet light upon the upper part of the standard, where were the cross and the motto, but only, and always, upon the narrow circumference of the spear, or pole of the standard.

5. Lausantius, or the author of the book "Of the Deaths of Perfecutors," who wrote a few years after this appearance in the heavens is supposed to have happened, says nothing of it, but only mentions Constantine's dream or vision in his sleep. But the truth of this vision rels solely upon the emperor's own word; and if the appearance of the cross in the heavens be denied, which Constantine confirmed to Eusebius with an oath, the credit of the emperor, as to the whole matter, is so weakened, that nothing concerning it can be taken upon the authority of his testimony only. It is further added by Lardner, that since severl ecclesiastical historians, who wrote after Eusebius, particularly Ruinius and Sozomen, insist not upon the appearance of the cross in the heavens, there were at that time Christians, as well as others, who either were totally ignorant of it, or else did not credit the account, as related by Eusebius from Constantine. Indeed, it does not seem reasonable to believe the relation of any one man, concerning a public appearance, which is attested by no others; nor did Eusebius himself believe it, much as Constantine endeavored to impel upon his learned friend. In order to account for the difference in the
the relation of this fight in the heavens, and the silence of historians respecting it. Dr. Lardner conjectures, that when
Constatine first informed people of the reason that induced
him to use the sign of the cross in his armies, he alleged
nothing but a dream; but in the latter part of his life,
when he became acquainted with Eusebius, he added the
other particular of a luminous cross seen somewhere by him
and his army in the day-time; and the emperor having re-
lated this in the most solemn manner, Eusebius thought him-
self obliged to mention it. But the first account had been
so long and so often told, that it was generally known, and
the only one that was so known. Whence it came to pass,
that historians a good while afterwards related the vision in
the dream as the original cause of Constantine’s using the
cross, that being the common and prevailing tradition con-
cerning it.

As to the time when the appearance of the crosses in the
heavens and the dream of Constantine are said to have hap-
pened, authors are not agreed; but these events have gen-
erally been referred to the 26th of October, A. D. 312.
But this opinion is far from being satisfactory, as it is liable
to many objections. Dr. Lardner supposes, that the sign of
the crosses began to be made use of by Constantine in his armies
on occasion of his last battle with Maxentius; some short time
at least before this battle; and the day of it, the thought of
employing this sign must have come into Constantine’s mind;
whether by divine revelation and admonition, or his own poli-
tic contrivance, let the inquisitive judge, says Lardner, af-
ter mature consideration. Constantine was a politician as
well as a Christian, and he might have adopted the standard
of the crosses, and the mark of it upon the shields of his fol-
diers, with a view of reconciling them to his change of reli-
gion, and also as a means of success in his designs, and of
victory over his enemies.

After this digression, we shall return to the more im-
mediate subject of this article. As to crucifixion, or the
manner wherein the punishment of the cross was effected,
the crimes, both ancient and modern, are exceedingly di-
vided; the points in dispute are, whether the criminal was
fastened with three nails, or with four; whether the feet
were immediately fastened to the crosses, or whether they
relied on a little piece of wood, in manner of a step, or step,
called στήλη; whether the crosses was planted in the earth
before the person was nailed on, fastening him afterwards by
means of a scaffold raised to the height of the place where
the feet were to be nailed; or whether he was nailed before
the crosses was raised or planted, as the painters represent it;
or lastly, whether the patient was fastened quite naked, or
covered: questions that have all been occasioned by the
crucifixion of Jesus Christ.

In reference to this event, we may here add, that our
Saviour was scourged before he was delivered to be crucified
(Math. xxvii. 26. Mark, xvi. 15.), agreeably to the usual
custom among the Romans, who scourged persons condemned
to capital punishment before execution. He also bore his cross.
(John, xix. 16. 17.) It was the constant practice among
the Romans for criminals to carry their own crosses. Thus
Plutarch (De Isis qui fero piumbar.), alleges this circum-
stance as an illustration of the misery of vice; “that every
kind of wickedness produces its own particular torment,
just as every malefactor, when he is brought forth to exe-
cution, carries his own cross.” We are also told by the
evangelists, that our Lord was crucified without the city.
This is conformable to the Jewish law, and to examples
mentioned in the Old Testament. Among the Romans
also this custom was very common, at least in the provinces.
The robbers at Ephesus, mentioned by Tertullianis Arbiter
(Satyr. c. 71.), were crucified by order of the governor of
the province, without the city. This was the custom like-
wise in Sicily, as appears from Cicero (in Vere. l. x. c. 69.)
Perils devoted to this kind of death often lingered for a
long while before their pain terminated in dissolution. Some-
times they remained suspended till they died of hunger; and
in some cases they were suffered to remain on the crosses till
their bodies were devoured by birds of prey; nor were their
relations allowed to take them down and bury them. The
law of Moses, however, forbade the bodies to remain on the
crosses after fun-fet. See John, xix. 31, 32, 33.

Cross, in Antiquity, was under one form or other of it,
a kind of monument of art, which very long and very
generally multiplied, which was constructed of various ma-
terials, but most commonly of stone, and which was intended
to answer a variety of purposes, civil and religious. He Un-
der the article CROOME, we have already mentioned se-
veral stone structures, which were erected in the British
islands by the Druids, Saxons, or Danes, and which served
as temples or altars, or burying-places. The stones that
formed them were sometimes placed across one another,
probably more from necessity or convenience, than from any
particular view to the figure of a cross. After the intro-
duction of Christianity, and more especially after the age of
Constantine, the crosses became an object of very general
veneration, and traces of it are discernible in many of our
churches and monuments, as well as in our civil and reli-
gious customs and ceremonies. Those monuments of stone,
which served as instruments of Druidical superstition before
the plantation of the gospel in the British isles, were after-
wards appropriated to the use of Christian memorials, by be-
ing formed in the figure of a cross, or marked with this
emblem of fanaticity and object of veneration. Structures
of the kind now mentioned were appropriated to various
purposes; and we find themubilizing in several places, as
memorials of the demarcation or boundary of property, pa-
rishes, and fannieries; as tephalicus monuments; as public
records of battles, murder, and other diftraits events; as
places of public prayer, preaching, and proclamation; and
others were placed by the roadside, in market-places, at
the junction of three or four streets or roads, and on the spot
where the corpse of any person of rank and eminence was
sent down for the rest of the attendants, in its way to inter-
ment; so that “a transeuntibus pro eus animo decoraveret.”
It was a common practice for mendicants to station them-
theselves near some of these crosses, and beg alms in the name
of Jesus; and to this custom the provincial provert, still re-
tained in the north of England, seems to allude, when ap-
plied to a person very urgent in his intreaties; “He begs
like a cripple at a cross.” Crosses were also in former times
erected on the tops of houses, by which tenants pretended
to claim the privileges of the temples-hospitellers, of de-
fending themselves against their rightful lords. This was
condemned by the statute Will. II. c. 37. Those stone-
crosses were ancient incitements to superstition, and even
objects of worship. See Exaltation of the Cross, infra.

Such was the veneration with which crosses were formerly
regarded, that when St. Augustine first came to preach
the Christian faith to the Saxons, he had a cross borne before
him with a banner, on which was the image of our Saviour.
Coffees were also erected by many Christian kings, before a
battle, or great enterprice, with prayers and supplications,
for the affluence of Almighty God. Olwald caused a cross
of wood to be erected before he fought with Cadwallo,
having it till the earth was rained in round about it,
while all his soldiers knelt down devoutly. Many in-
stances occur of crosses that were placed to mark the bound-
aries.
aries of districts, of church-property, and of sanctuary. Of the former class are the 'Strimp-crofs,' being the boundary-scenes between Chirly and Aitchesby, in the county of Lancaster; another at the name of the summit of a high hill at Townley, in the parish of Whalley, and county of Lancaster; the three crofs-tone, on the moors called Wry-nose, near the river Dudding, dividing Cumberland from Westmoreland; the crofs yet remaining on Stainmore, which is the boundary-tone between Yorkshire and Cumberland; and the tone-crofs, called 'Mugdrum crofs,' near Lundoris in Fifeshire, which, according to Camden, marked the boundary between the districts of Fife and Strathern, which was also a place of sanctuary.

At Ripon, in Yorkshire, the boundaries of sanctuary of the collegiate church were distinguished by crofses. Among the monumental crofses, thofe at Penrith church-yard, in Cumberland, are somewhat fingular and curious. Such are thofe in the church-yard of Glaedome in Scotland, and that in the church-yard of Bewcastle in Cumberland, the latter of which is afcribed by many antiquaries to the Danes. These monuments are very numerous in 6 fiches, Scotland, Ireland, and the north of England. There were two of this kind in the monks' cemetery at Glanfounby; and such was also the monument of St. Dunant at Canterbury. Crofses were ufually erected in the way leading to parochial churches and cemeteries. Cornwall abounds with tone-crofs. In church-yards, by the fides of roads, and on the open downs, they remain foherty and neglected, though among the lower claffes of the people a fort of fuperfluifus reverence is still paid to thofe monuments. The preaching-crofs, tone-pulpit, or oratory, was probably firft erected for the purpofe of efhering and accommodating the minifter when he preached to a large concourse of people in the open air, or for his convenience in reading the funereal service. Of this kind are the crofs near the monaflic house of the Black-friars in the city of Hereford; that in the church-yard of Iron-Aelon in Gloucefhire; that at Halbeach in Lincolnshire; and that on the fide of the abbey at Shrewbury, commonly called 'St. Winifird's pulpif.' But the moft noted of this clafs was 'St. Paul's crofs' in London, which was probably at firft of the monument kind. This was the moft celebrated place in London for public fermoins, though it was often abused by the agents of the predominant party. This crofs appears to have been flanding at the time when Dugdale wrote his history of St. Paul's. There was another public preaching crofs in Spitalfields, near London, where the lord-mayor, and principal officers of the city, &c., regularly attended to hear fermoims in Easter-week. Thofe difcourfes, called the Spital-fermoins, originated at this crofs; but they are nowplaced at St. Bride's.

Crofses not only marked civil and ecclefiatical limits, but pofsumed fervices, when the bounds were viifed in procession; a flatton denoting a church-oratory, or other reifing place, where a prayer was faid or a short verfe fang. In the ifle of Iona were 360 crofses, of which one only now remains. Crofses alo on the road, or without the limits of the cemetery, fem to have been endowed with a privilge of sanctuary.

The market-crofses are of various shapes and fizes. Their general deign was to excite public homage to the religifn of Chrift crucified, and to infpire men with a fene of morality and piety amid the ordinary trafactions of life. In almoft every town that had an abbey, or any other religious foundation, there was one of thofe structures. At moft markets and fairs it was then, as it is now, customary to pay certain tolls on articles that were fold. Many of thefe tolls belonged to monaftries, and in populous places they muft have produced considerable revenues. To promote thofe, as well the doctrines of their religion, the monks frequently ha-ruifed the populace from these crofses; and it is tenable to fuppofe that they flrongly urged the neceffity of a firft adherence to religion, honesty, and induftry. Previous to the difftution of the monaftries, there was barely a market town in England without one or more of thofe structures; and many of them still remain, exhibiting beautiful specimens of the architecture and fculpture of the times. To this clafs we may refer the 'White Friar's crofs' in the road, about one mile W. of Hereford; the crofs at Coventry, Gloucefer, Chedder, Malmsbury, Chichefier, Sourhead in Wiltshire removed from Bifton, Winchifler, Leigh-ton-Buzzard in Bedfordshire, and Glaffouby. Crofses of memorial are thofe which were erected in places where the bodies of eminent perons halted in their way to interment. Of these a fences formerly ftood by the fide of the road which communicated between Paris and St. De-"nis, where the kings of France were ufually interred. The moft memorable and interefling objects of this kind were thofe which kings Edward 1. of England erected at the different flations where the crofs of queen Eleanor refid, in its prografs from Nottinghamshire to London. Mr. Gough (Vetus at Monumenta, vol. iii.) flates, that there were originally 15 of thofe elegant structures; but only three are now remaining, which, by their peculiar beauty, as fem-"mens of architecture and productions of art, ferve to excite regret at the deftruction of the others. Hiftorians, how-

other, diver, not only as to the place and time of queen Eleanor's death, but also concerning the number of cropped erected. The moft probable account is that the died at Hereby in the county of Nottingham, in November, A.D. 1250. At the places, probably near a religious house, where the body halted for a night, the kings afterwards ordered a fumptuous crofs to be erected. The frilt of the three above-mentioned is the Crofs at Gredlingley, about four miles from Kettering, in Northamptonshire, which is of a triangular shape, elevated on eight steps, and divided into three compartments: the frift, or lower one, is folid, covered with ornamental sculpture, each face divided into fix panels, attached to which are fix shields, charged with the arms of England, Cañlel, Leon, and Pon-thien. Above this is an embattled turret, from which rife fix pillars, supporting as many decorated canopies. Beneath these are placed three statues of the queen, difpofed in fo abfurd a manner, that the pillars at the angles directly interfet the front of each figure. The second is the Queen's crofs near Northampton, the moft perfect of the three, and very fimilar in fhape and ornaments to that at Waltham, though the latter is of an hexagonal form, and the former is octagonal. Standing on eight steps, in an open country, and on elevated ground, it affumes a very imposing appearance. Like the others, it is divided into three stories, the lower of which has eight faces, feparated by butteffes at the angles. Each face is ornamented with a pointed arch, having a central mullion, with tracery, and the whole crowned with the four fegments. Two thrones are also attached to each face, charged with the arms of England and Ponthieu fingly, and thofe of Cañlel and Leon quarternly. A carved book is also affixed to ffour of the fides. On the weftern face have been inferted the arms of Great Britain, in a garter, under a crown, beneath which is a Latin inscription; and on another tablet is another in-"cription, the former importing that it was repaired in the year 1713, and the latter in 1762.

The third is the Crofs at Waltham in Ferrffordshire, which, though more dilapidated than either of the former, is more enriched in its architecture, and more elegant in its fculpture. This formerly stood on the crofs, but the ground has

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ing been raised round it, the steps are covered and it appears shorter than the others. This has fix faces. For a further account of these crosses, illustrated with appropriate and excellent engravings, see the valuable work of Mr. Britton, entitled "Architectural Antiquities of Great Britain," parts iv. and v.

Crosses, &c. are forbid to be brought into England, by 13 Eliz. c. 2, on pain of a presumpt.

Cross, Invention of the, invented cruces, an ancient事实, solemnized on the third of May, in memory of St. Helena's (the mother of Constanine) finding the true crosses of Christ deep in the ground, on mount Calvary; where she erected a church for the preservation of part of it; the rest being brought to Rome, and repoited in the church of the Holy Cross of Jerusalem.

Theodoret mentions the finding of three crosses, that of Jefus Christ, and those of the two thieves; and that they distinguished between them by means of a sick woman, who was immediately healed by touching the true cross. The place is said to have been pointed out to her by St. Quiricus, then a Jew, afterwards converted and canonized.

Nothing, says Tilletmon, is more certain than this discovery of the true crosses in the days of Constanine; for it was attested by Rufinus, Sulpitius Severus, Theodoret, Sozomen, Ambrose, Paulinus, and Chryfofom. The account he gives of this wonderful discovery is as follows: "When St. Helena, the mother of Constanine, was arrived at Jerusalem, and had begun to visit the sacred places, the Holy Ghost inflamed her with a desire to find the wood of the crosses. But no perfon had ever seen it, or could tell where it had been hid. She then inquired for the place where Christ was crucified, and found it out by the help of the Jews and Chriftians; or, as Rufinus says, by some revelation; and being moved by the Holy Spirit, she ordered the building to be pulled down, and the rubish to be removed. The faith of this female saint was recompened beyond expectation; and upon digging very deep, they found the holy sepulchre, and near it three crosses, with the title which had been affixed to the crosses of Christ, and the nails which had pierced his sacred body. But a difficulty still remained, which was to distinguish the crosses of Christ. St. Macarius, bishop of Jerusalem, proposed the method. He was a prelate illustrious for his wisdom, truly worthy of God, and had just overthrown the heresy of Arius at the great council of Nice. This holy man, knowing that one of the principal ladies of the city lay extremely ill, told Helena, that they must carry the three crosses to the sick perfon, and beg of God that he would cure her by the application of the true crosses. The emperors, and all the people being present, he touched the woman with two of the crosses ineffectually; but as soon as he had made use of the third, she arose in perfect health, and stronger than she had ever been. It is believed, says Sozomen, that they applied the crosses to a dead body, which instantly revived. St. Paulinus and St. Sulpius Severus mention only this last miracle. Helena, full of joy, adored not the wood itself, says St. Ambrose, which would have been a pagan folly, but the king of heaven who suffered upon it. She took part of this treasure to carry to her son, and including the reli in a silver box, she committed it to the bishop of Jerusalem. It was carefully kept in the church, which was built there, and the bishop alone had the power to give little pieces of it, which were considered as a singular favour and blessing. St. Paulinus relates a very singular thing concerning that part of the crosses which was at Jerusalem. This cross, says he, having a vital virtue in an infallible and inseparable substance, hath yielded, and continues to yield, almost daily, its precious wood to the desires of an infinite number of persons, without suffering any diminution, continuing all the while as if it had been untouched. It permits itself every day to be divided into several parts, and yet remains exposed to the generation of the people. St. Cyril of Jerusalem says only, that the pieces of the crosses were brought away from Jerusalem, and were spread all over the earth twenty-five years after." (H. E. vii. 5.) In the review of this relation a difficulty occurs, whether the discovery of the crosses was a fiction formed some years after the death of Helena and of Constanine, or whether Helena really found a cross. Upon the whole, it seems most probable, that the story was invented by the Chriftians at Jerusalem, after the emperor and his mother were dead. The discovery in the time of Constanine reffed principally upon the authority of Cyril of Jerusalem, the only writer who lived at that time, and who speaks of no miracles attending the discovery, and the quifion is, whether the epistle of Cyril, which mentions it, be genuine or spurious, or interpolated; and also whether Cyril, supposing it genuine, made up that part of the story himself, and dated the discovery at too early a period. If Helena found a cross, it is impossible now to know how the fraud was conducted, on the part of those who were actors, both hiders and finders, in this tranflation. Eusebius, who lived at the time, and was bishop of Cafera, in the neighbourhood, says not a word of the crosses, though he relates the discovery of the sepulchre of Christ, and mentions the magnificent church which was erected there, and names Macarius as the person to whom the care of the building was committed. (Vit. Confi. ii. 25, &c.) It is, therefore, to be concluded, either that he knew nothing, or believed nothing of it. One would hope that the letter ascribed to St. Cyril is spurious or interpolated. Helena was fourteen years old when she took this journey to Jerusalem; and it is more probable that she should have been imposed upon, than that she should have had any share in the contrivance. After her death she was painted and highly honoured: her body is said to be in an abbey in France, and also at Rome; but there is no great inconveniency in supposing it to be in two places at once. The multiplication of the crosses attested by Paulinus, leads us to this opinion. (See Tilletmon, H. E. vii. 18.) The ecclesiastics of Jerusalem, at whatever time they contrived the discovery of the crosses, knew their own interest very well. It must have drawn a swarm of pious vagrants to their city, and have brought in great revenues to the church and to the bishop, if they gave only 6d. a-piece, to see the box in which the crosses was locked up. The finding of the crosses is said to have been done by St. Jerome in his retreat at Cerigo, in Auvergne. See the remarks of J. Balangé, Hist. des Jifs, vi. 14. § 10. Jortin's Remarks on L. H. vol. iii. Gibbon's Hist. vol. iv.

Cross, Exaltation of the, an ancient feast, held on the 14th of September, in memory of this, that Heraclius restored to Mount Calvary the true crosses in 628, which had been carried off fourteen years before, by Chofroes, king of Persia, upon his taking Jerusalem from the emperor Phocas.

The adoration of the crosses appears to have been practised in the ancient church, in as much as the heathens, particularly Julian, reproach the primitive Christians with it. And we do not find that their apologists disclaimed the charge. Mornay, indeed, affented, that this had been done by St. Cyril, but could not support his allegation at the conference of Fontainbleau. St. Helena is said to have reduced the adoration of the crosses to its just principle, since she adored in the wood, not the wood itself, which had been direct idolatry and heathenism, but him who had been nailed to this wood. With such modifications, some protestants have been induced to admit the adoration of the crosses.
Crosses. John Hus allowed of the phrase, provided it were expressly added, that the adoration was relative to the person of Christ. The Roman catholics have been charged, in our opinion unjustly, with the adoration of the crosses. To this purpose, it has been said, that Imbert, the good prior of Gacony, was severely persecuted in 1683, for telling the people, that in the ceremony of adoring the crosses, practiced in that church on Good Friday, they were not to adore the wood, but Christ who was crucified on it: the curate of the parish told them the contrary: it was the wood! the wood! they were to adore. Imbert replied, it was Christ, not the wood: for which, it is said, that he was cited before the archbishop of Bourdeaux, suspended from his functions, and even threatened with chains and perpetual imprisonment. It little avail'd him to cite the bishop of Meaux's dilatation: it was answered, that the church allowed it not. This story we have cited, as it has been related by various authors, in order to have an opportunity of contradicting the allegation implied in it, considered as a charge against the catholics. We are well assured that a Catholic priest, of unquestionable veracity and honour, that as Bossuet's exposition was solemnly approved of at its first publication, by the whole prelatical body of France, and by the reigning pontiff. Innocent XI., fo it will be formally subscribed to, should the occasion require it, by every Catholic bishop in the three kingdoms, and by Pius VII. himself. But it is unnecessary to add any thing further on this subject, besides appealing to the very words of the council of Trent on the subject in question; viz. of a council from the doctrinal decrees of which the catholics are never permitted to fwaye, and which was specially held to determine the fens of their church upon all modern controversies. "Imagines porro Christi, Deiparae Virginis, & aliorum sanctorum in templis praefertim habendae, & retinendas, eique debitum honorem, & veneracionem impetrando: non quod credatur inaequa aliquo in divinitat virtus propter quam sint colendae; vel quod ab eis sit aliud potius potendi; vel quod fideica in imaginibus fit agenda: velut olim fiebat a gentibus quae in idolis spem suam collocabant: sed quoddam honos quae eis exhibuit referatur ad prototypa quae ille reprezentant: ita ut per imagines quas occultam, & coram quibus caput aperimus & precumbimus Christum somoremus & sanctos, quorum ille similitudinem gerunt, veneremur." Concil. Trid. fept. xxiv. cap. 21.

Cross-bearer, port-crois, cruziger, in the Romish church, the chaplain of an archbishop, or a primate, who bears a cross before him on solemn occasions.

The part has the cross borne before him every where; a patriarch any where out of Rome; and primates, metropolitans, and those who have a right to the pallium, throughout their respective jurisdictions.

Gregory XI. forbade all patriarchs and prelates to have it borne in presence of cardinals. A prelate bears a single cross, a patriarch a double cross, and the pope a triple one on their arms.

Cross-bearers, also denote certain officers in the Inquisition, who make a vow before the inquisitors, or their vicars, to defend the catholic faith, though with the loss of fortune and life. Their business is to provide the inquisitors with necessaries. They were formerly of great use; but in process of time, some of their constitutions were changed, and they were called, of the penance of St. Dominic. Limборch's Hist. I. q. by Chandler, ch. x. See Familias, and Inquisition. See also Albigenenses.

Cross-birth, in Midwifery. When in labour, the arm, shoulder, or any other part of the child than the head, presents to the mouth of the uterus, it is usually called a cross-birth.

Cross, pectoral, is a cross of gold or silver, or other precious materials, often enricched with diamonds, which the bishops, archbishops, &c. and regular abbes, wear hanging from the neck.

Cross of Jesus Christ, order of, was instituted, in 1217, by St. Dominic, and confirmed by pope Innocent VI. in 1220. The badge of this order was a cross poctene per crosses counterchanged, argent and sable, in pale the letter F, furnished with the letter X, or.

Cross, order of the flavy, or Croisades, an order for ladies instituted in 1606, by the empress Eleonora de Gonzaga, wife of the emperor Leopold; on occasion of the miraculous recovery of a little golden cross, wherein were enclosed two pieces of the true crosses, out of the ashes of part of the palace. It seems the fire had burnt the eafe wherein it was included, and melted the crystal; yet the wood remained untouched. The enignum of the order is a medal of gold chafed and pierced; in the centre the imperial eagle; over all a cross furmounted with the letters I. H. S., and a small crose over the letter H, with a motto, "Salus et Gloria:" worn pendent at the breast by a small black ribbon.

Cross of St. Louis, a French order, which was purely of a military nature. It was instituted by Louis XIV, in addition to that of Christian Charity, which had been founded by Henry III., king of France, in favour of maimed officers and soldiers in 1653. This order confined of eight great crosses and 24 commandes, besides the king, who was grand master, the dauphin always invested with it, the treasurer, recorder, and other. Land and sea officers wore it promiscuously. The crosses confined of eight points enamelled, white, edged with gold, having in the angles four fleurs-de-lis, and on the middle a circle, within which is the image of St. Louis in armour, holding in his right hand a crown of laurel, and in his left a crown of thorns, &c. The crosses of the knights was attached to the button hole of the coat by means of a small ribbon crimson coloured and watered.

On one side was this inscription, Ludovicus Magnus instituit 1693; and on the reverse there was a blazing sword with the following words, Bellice virtutis præmium.

Cross, maids of the, a community of young women instituted in 1265, at Rocq, in Picardy, and since dispersed to Paris and other towns. They instruct young persons of their own sex; some take the three vows of poverty, chastity, and obedience; others retain their liberty. They are under the direction of a superior.

Cross judgment of the, in custom in France and other parts of Europe, in the middle ages, of giving judgment in favour of one of two contending parties, who hold his arms for the longest time lifted up a cross.

Charlemagne ordered, that if any difference arise between his children, they should be terminated by the judgment of the crosses. In a plentum or trial in the presence of this emperor, we have such an account of it as sufficiently shews the imperfect manner in which justice was administer'd even during his reign. In the year 775, a contest arose between the bishop of Paris and the abbot of St. Denys, concerning the property of a small abbey. Each of them exhibited deeds and records in order to prove the right to be in them. Instead of trying the authenticity, or considering the import of these, the point was referred to the judicium crucis, in the manner stated in the feudal at this article. The persons employ'd by the bishop on this occasion, had less strength, or less spirit than his adversary, and the question was decided in favour of the abbey. If a prince so enlightened as Charlemagne condescended such an absurd mode of decision, it is no wonder that other monarchs should tolerate it so long. Lewis the Pious confned this judgment.
The Cross.

In the administration of this Christian ordinance, a practice, though not enjoined by any express command, or sanctioned by any known example in Scripture, was adopted at an early period, of figuring the forehead of the person baptized with the sign of the Cross. The use of the Cross indeed was very frequent in the primitive times. Such was the respect paid to it, that it formed, in one mode or other, a distinguishing part of their civil and religious ceremonies. The first Christian writer who mentions it in connection with baptism, is Tertullian, after the middle of the 2d century; and he (De Cor. Mil. c. 2.) thus describes it, or entry upon business, whenever we come in, or go out from, any place, when we dress for a journey, when we go into a bath, when we go to meet, when the candles are brought in, when we lie down or sit down, and whatever business we have, we make our foreheads in the sign of the Cross: and speaking of baptism, in his treatise, (De Carn. Refor.) he says, "the flesh is signed, that the soul may be fortified." This signification was performed with the oil used in the attendant ceremony ofunction, with which the priest touched the head or forehead in the form of a Cross. Tertullian, however, on other occasions, describes the custom of baptizing without mentioning signing with the Cross. This custom (De Praep. adv. Haeret.) of priests, who, imitating the service of God in the idolatrous rites of Mithras, baptized some as his believing and faithful servants, and signed them in their foreheads as his followers. Cyprian, who lived in the third century, obsevrs (De Unit. Eecles. § 16.) that this sign was made in the forehead; and hence (De Lapis, § 1.) he calls a Christian's forehead, "a signed forehead." In succeeding ages, the same practice of signing with the sign of the Cross is mentioned as used whenever a person was baptized; and it was done, as the form of baptism in the service of the church of England expresses it, "in token that hereafter he shall not be ashamed to confess the faith of Christ crucified, and to fight under his banner against sin, the world, and the devil, and to continue Christ's faithful soldier and servant unto his life's end." It has been said, however, that this ceremony does not appear to have been used in baptism till the latter end of the fourth or fifth century. See Baptism. To this ceremony, as well as some others, enjoined by the service of the church, and by the injunctions of Queen Elizabeth, the puritans repudiated conformity. A.D. 1567; alleging that the sign of the Cross in baptism is no part of the institution as recorded in Scripture; and that, although it was usual for Christians, in the earlier ages, to cross themselves, or make a Cross in the air upon some occasions, yet there is no express mention of its being used in baptism till about the 5th century. They also alleged, that it had been abused to superstitious uses in the church of Rome, and regarded with such veneration by some protestants, that baptism itself was thought to be imperfect without it; and that for these reasons it ought to be laid aside. On occasion of a debate upon the Cross in baptism in the upper house of convocation, A.D. 1603, Bancroft, bishop of London, and some others warmly vindicated it; but Dr. Rudd, bishop of St. David's, pleaded, with singular candour and considerate eloquence, but without much effect, for charity and moderation. He was answered by other prelates, and forbidden by the precentor to reply. The puritans, and also the protestant dissenters of modern times, object to the imposition of any rite, the observance of which, as a religious act, is not authorized by precept or pattern in the Christian code of their faith and practice.

Cross, in Botany, is used to express the arrangement of the petals of certain flowers; called plants fere cruciformis.

See Cruciform.

Cross, in Coins, a name given to the face, or right side, the other being called the pile, or reverse. It has been a common error that the reverse was meant by the Cross, because at this time with us marked with figures disposed in that form; but the crumbling of the head of the prince in these kingdoms, on the right side of the coin, was preceded by a general custom of fixing on that part the figure of a Cross, while the other, called the pile, contained the arms, or some other device.

Cross, in Dialling. See Dial.

Cross, in Heraldry, is defined by Guillim, an ordinary composed of fourfold lines; whereof two are perpendicular, and the other two transverse; for so we must conceive of them, though they be not drawn throughout, but meet by couples, in four right angles, near the fess-point of the escutcheon. See Ordinary.

The content of a Cross is not always the same: for when it is not charged, cantoned, nor accompanied, it has only the fifth part of the field; but if it be charged, it must contain the third part thereof.

This bearing was first bestowed on such as had performed, or at least undertaken, some service for Christ, and the Christian profession; and is held, by divers, the most honourable charge in all heraldry. What brought it into such frequent use was the ancient expeditions into the Holy Land; and the holy war, or pilgrimage, after their pilgrimage, taking the Cross for their cognizance; and the ensign of that war being the Cross.

In those wars, says Mackenzie, the Scots carried St Andrew's Cross; the French a cross argent; the English a cross or; the Germans, fable; the Italians, azure; the Spaniards, gules.
C R O S S.

St. George’s cross, or the red cross, in a field argent, is now the standard of England; that being the reputed patron of this nation.

Guilielm enumerates thirty-nine different forts of crosses used in heraldry, the several names of which here follow; and the descriptions of them are to be sought for under their proper articles. A cross voided, a cross wary voided, a croc’s patée dimbaried, a croc’s patée fitted on the foot, a croc patée on three parts and fitted on the fourth, a croc engaried, a croc patonee, a croc flory, a croc patonee voided, a croc avenale, a croc patonee lambeaux, a croc furchée, a croc crolett fitted at the point, a croc bottenue, a croc pommeée, a croc urdez, a croc degraded fitted, a croc potent, a croc potent fitted, a croc calvary, a croc crolett set in degrees, a croc patriarchal, a croc anchored, a croc molinée, a croc écheée, a croc flory or fleur-de-lis, a croc double fitted, a croc a-feize points, a croc milinée, a croc raguled, a croc pointed voided, a croc pall, a tau or St. Antony’s croc, a croc voided and couped, a croc couped pierced, a croc molinée pierced lozeng-ways, a croc molinée quarter-pierced, a sartiere or St. Andrew’s croc, which will be distinctly spoken of under that denomination; and so the other may be found more particularly described under the names of their several differences.

Colombiere makes twenty-two distinct sorts of crosses, of which we shall only mention those that differ from such as have been mentioned above; as a croc remply, which is only one croc charged with another; a croc party, that is, one half of one colour, and the other of another; a croc quartered, that is, the opposite quarters of several colours; a croc of five pieces, that is, of so many colours; a croc moufle, and abalée; a croc barbée; a croc croiflante, or crescented, that is, having a crescent at each end; a croc forked of three points; a croc pomée of three pieces; a croc reference; a croc pointed; a croc ankered, and furranker; a croc ankered with flounces heads; a croc orle; a high croc; a croc rayonnant, or calling out rays of glory; a croc of blasta; a croc of the Holy Ghost; a croc forked like the ancient refts for musquets; a croc with eight points; a croc bourdonnée; a croc crabonnée and tournée; a croc cablée; a croc inclining, that is, made of beds; a croc truelle; a croc fleuronnée; a croc vuilée, écheée, and pommetée; a croc croisillée and baltillée; a croc with four steps to every arm; a croc rounded; a croc and an half; a croc efoilée, or starways; a croc corded; a croc doubled of six pieces set together; a double croc split in pale; a long croc cut in pieces and dismembered; a croc couped or cut through in felle, of the two contrary colours to the field; a chevron surmounted by an half croc; four tails of ermine in a croc, the tops of the ermines opposite to each other in the middle; four pieces of var placed crois-ways, and counterpointing in the centre; the croc or sword of St. James; croc potence crabonnée on the dexter upper arm, and a potence about the middle of the shaft.

There are the various crosses we find in the aforesaid authors; which some may think too many, as not being all used in England; but heraldry extends to all countries; and all terms used require to be explained.

Nor is it only in crosses that the variety is so great; the like is found in many other bearings, and particularly in lions, and the parts of them, whereas the fame Colombiere gives us no less than ninety-six varieties. Leign mentions but forty-six several crosses; Sylvanus Morgan, twenty-six; Upton, thirty; Johannes de Bado Aurore, twelve, and so others, whom it is needless to mention. Upton owns he dares not presume to ascertain all the various crosses used in arms, for that they are at present almost innumerable; and therefore he only takes notice of such as he had seen used in his own time.

Cross, in the Mange, a figure which horuces describe in making curvets. To teach a horse to describe this figure, he should first be made to walk upon a straight line, about four times the space of his own length; then go backward upon the same line; afterwards advance to the middle of it, then go side ways to the right hand about twice the measure of his own length, the same on the left, and then return to the middle of the line, where he should stop and be careful. When he can tread these lines equally, advance, go backward, and to either side, flying the heel, it will be right to put him to make a curvet at the beginning, the middle, and the end of each line; and if, upon repeated trials, he is found ready and obedient, he may be called upon to make the entire crosses in curvets.

Cross, in Mining, are two nicks cut on the superficies of the earth, thus +, which the miners make when they take the ground, to dig for ore. This croc gives the miners three days liberty to make, and set on foines.

As many of these crosses as the miner makes, so many makes to the ground he may have in the vein, if he set on foines within three days after the making his crosses or crois-ways. But if he makes but one croc, and a flanderer makes the second, and a stranger makes the third, every one is served with the next near, according as they have, first or last, sooner or later, made their crois, or croisses, upon the ground.

Cross, in Surveying, is a mathematical instrument of great utility to a land surveyor, as it enables him, while going about his survey with his chain, to measure the length of the situation lines, at the same time to take offsets, or perpendicular directions to the corners of a field, or irregular boundaries; so as to get the exact figure of the boundaries of one or more fields. When a theodolite is dispended with, the use of this instrument is absolutely necessary. The principle of this instrument consists in two lines of sight, placed at perfect right angles to each other, and about 4 inches apart, either on wood or brafs. Fig. 1, Plate III. (Surveying) represents one usually made of brafs by mathematical instrument makers; it consists of four sights fixed on a croc, at right angles to each other, and when in use is moved by a wooden flaff about 6 feet long, with an iron pointed ferril at the bottom, to go easily into the ground.

For portability, the sights are made to take away from the crois, by unfixing four ferewa, a, a, a, a, and the flaff by brafs jocets to unfcrow into three parts, each two feet in length.

Another kind of crois, (and rather more used by surveyors,) is made of a brafs cylindrical tube, about two or three inches in diameter, with four sight-fisls pierced out of it’s circumference at perfectly equal distances, which can take any two of the opposite sights to be right angles to the other two. (See fig. 2.)

The correctness of the sights of any crois may be easily proved, by looking at one object through two of the sights, and without moving the instrument, observing an object through the other two sights; then turning the crois on its flaff, look at the same object through the opposite sights; if they are accurately in the direction of the sights before, the instrument is correct.

To survey a field by the crois, (suppose of the form of a B C D E, fig. 3.): place marks at the several angles. Measure the line A C, and also the perpendiculars from the angles, to that line as determined by the crois. To find a perpendicular, such as at F, place marks at pleasure on the line A C, and let the crois at the same time, in such a place,
CROSS.

is that through two of the fights you can observe two of the spokes placed on that line, and the sluff at E. If at this station E be not visible, remove the instrument backwards or forwards, till the lines, A F, E F, make a right angle in F, by which means the triangle, A F E, will be had. After the same manner is the point, H, found, where the perpendicular D H falls, whose length, together with that of H F, is measured to have the plot of the trapezium E F H D.

Again, measure HC, making a right angle with H D, and the figure of the triangle, D H C, will be had. Lastly, find the point G, where the perpendicular, B G, falls after the same manner, and the whole figure of the plot, A B C D E, will be given; the area of which is obtained by adding those of the triangles and trapezium together.

The determination of a very irregular boundary of a river, hedge, &c. by the crofs, is as follows: Let A b k l m n, fig. 4, be the irregular boundary, measure a straight line, as A B, along the side of the foregoing line, and while measuring, observe when you are opposite to any corner or bend of the hedge, as at e d e, &c. From thence measure the perpendicular offsets as at e b, d i, with the offsets f l a f f; but if they are long ones, with the chain. The situations of these offsets are readily found by the crofs as above directed.

Fig. 2, represents the cylindrical crofs with the additional improvements by Mr. W. Jones. A small compass needle are applied at its upper part, as at A, and a moveable graduated base at B, turning by rack and pinion. A nonius, C, is engraved at the bottom of the cylinder, so adapted to the graduations of the moveable limb, as to subdivide them into 5 minutes of a degree. Where no great accuracy is required, this small pocket instrument unites the advantages of a crofs, circumferentor, and small theodolite.

A useful surveying crofs by reflexion, (fig. 5,) was contrived many years ago by the father of the late Mr. George Adams. It confists of the index and horizon glasses of the Hadley's quadrant, placed together with the inclination of 45 degrees. The small mirror, A, is left half unsilvered, so that an object seen reflected first from the large glass, and then from the small one, will appear to coincide with another object, seen by direct vision through the unsilvered part of the glass, whenever the two objects subtend a right angle from the centre of the instrument. Thus, in fig. 6, suppose a person at C looking into the silvered part of the small mirror, sees the windmill, B, after two reflexions, upon, or coincident with a tree, A, visible through the unsilvered part of the glass; be is certain that the windmill, C, is perfectly at right angles with the tree A, at the point where the centre of this optical square is held. Upon this principle, the reader may readily conceive how, with its assistance in the field, a perpendicular may be found to any given point, or from any particular point to raise a perpendicular.

For the object, by direct vision, through the transparent part of the glass, will always coincide with the objects seen by reflection, when they are at right angles to each other from the centre of the instrument. Fig. 5, represents the glasses uncovered; when complete, it has a small brass box cover, with an opening behind the glass A, and a slight hole for the eye, as shown at C, fig. 6.

This small pocket instrument has been found useful to military officers for determining the perpendicular positions of men or marks in the field. See Jones's edition of Adams's Geometrical, &c. Essays, 1823.

Cross, as a signature to a deed, is derived from the Saxon practice of affixing the sign of the crofs, whether they could write or not. Several charters still remain, to which kings and persons of great eminence affix "figuram crucis manu propria proignatione literam." Hence is derived the expression of setting instead of signing a paper. In the 8th century, Herbart Comes Palatinus, though supreme judge of the empire by virtue of his office, could not subscribe his name. So late as the 14th century, Du Guesclin, confable of France, the greatest man in the state, and one of the greatest men of his age, could neither read nor write. The greater number of the clergy were not much less ignorant than the laitymen. Many dignified ecclesiastics could not subscribe the canons of those councils in which they sat as members.

Cross-Bar. See Carriage.

Cross-Bar Shot, are flot with iron bars crossing through them, sometimes landing six or eight inches out at both sides. They are used at sea, for injuring the enemy's rigging; and at sieges, for destroying the palisades in the covert-way, ditches, &c.

Cross-Battery, in War. See Battery.

Cross-Bill, in Chancery, is an original bill, by which the defendant prays relief against the plaintiff.

Cross-Bill, in Orniatology, the English name of the Loxia curvirostra, which fea.

Cross-Box, a species of box made use of before, and for a considerable time after, the invention of gunpowder, for throwing arrows, &c. See Bow, and Archery.

Cross, Cape, in Geography, a cape of Upper Canada, which projects from the N.E. side of St. Mary's river, at the outlet of Lake Superior, opposite the Falls, N. lat. 46° 30'. W. long. 84° 50'.—All, a cape on the western coast of North America. N. lat. 57° 57'. E. long. 223° 21'.

Cross-Creek, a township of America, in Washington county, Pennsylvania.

Cross-Cayafe, in Chancery, are such as occur on a crossbill filed by the defendant against the plaintiff in the original cause: these are generally contrived to be brought in together, that the same hearing and the same decree may serve for both of them.

Cross-Fell, in Geography, a mountain of England, in Cumberland, which, in Dr. Garnett's opinion, is the highest mountain in England. In Mr. Houfieman's Description of Cumberland, its height above the level of the sea is stated to be 3390 feet; according to Pennant, 3839 feet. The mount presents a large heap of loose whitish free-stone, or, more probably, argillaceous grit.

Cross-Fire, in the Art of War, is when the lines of fire from two or more parts of a work cross one another. It is frequently made use of, to prevent an enemy's passing through a defile. The flanks as well as the faces of two adjoining batteries afford cross-fires. The faces of two adjoining redoubts furnish a cross-fire.

Cross-Furrow, in Agriculture, a term signifying the oblique or crofs grip, or gutter, which is formed in tillage lands, for the purpose of receiving the superabundant rain, or other water, from the outer and other furrows, in order to convey it away from them into a side ditch, or other proper outlet. See Furrow.

Cross-Furrowing, the procex or operation of forming or constructing crofs gutters or furrows. It is a business which requires considerable care and attention to perform it well; but which is capable of being executed either by the plough or the plough, when properly constructed for the purpose. Some attentive farmers are likewise in the habit of having recourse to the plough after the plough, in performing this sort of field work. It should always be executed in a perfect and complete manner, as much of the success of the crop depends upon it. See Furrow, and Furrowing.
Cross-grained stuff, in Joinery. Wood is said to be cross-grained, when a bough or branch has shot out of it: for the grain of the branch, shooting forward, runs at right angles to the trunk.

In wood well grown this defect is scarce perceivable, except in working; but in deal-boards these boughs make knots. If the bough grew up with the young trunk, instead of a knot is formed a curling in the stuff; very serviceable under the plane.

Cross-Haven, in Geography, a small town of the county of Cork, Ireland, situated at the mouth of the river Oomby, which flows into the west of Cork harbour. Sir Francis Drake, in 1589, having a small squadron of five ships of war, was chased into this harbour by a superior fleet of Spaniards, and marooned his ships in a safe haven behind a hill, whilst the Spaniards fell upon the harbour of Cork in pursuit of him, and returned without discovering his retreat. A little up this river Oomby, near the spot where the exyle of Corigoline was built, the first earl of Cork intended to have founded a town, which should rival Cork in trade; but the rebellion of 1641 ruined the design. Cross-haven has about 50 houses, placed one above another on the side of a hill, the permanent inhabitants of which are chiefly fishermen; but it is much frequented in the summer for sea-bathing. It is about 9 miles from Cork. Smith.

Cross-headings, in Canal making, are small culverts or foughs, branching from the main heading or drain, where a tunnel or subterraneous arch is to be formed, for more effectually collecting the spings or outfalls of the ilrata, without which it is often impossible to proceed with the work. See CANAL, and TUNNEL.

Cross-jack, or Square-Sail of a floop, in Nautical Language, is a quadrilateral sail, square on the head and leeches; the head is bent to the cross-jack yard, and it hangs at right angles with the ship's length, and parallel to the deck, extending within fix inches of the cleats on the yard-arms. The depth of this sail is four-fifths of the depth of the fore-leech of the main-ail. This sail has two reef bands, four inches broad; the lower one, at one-fifth of the depth from the fall, and parallel to the foot; and the upper one at the same distance from the head. A reef-stripe is made at each end of the upper reef-band; and the head of the reef-stripe is made on each leech; the upper head of the reef-stripe is on the middle of the leech, and the others are equally distant from that and the clew. The clews are sometimes marked on; and for this purpose, ten marble-holes are made each way from the clews. The bolt-rope, on the foot and leeches, should be 3/8 inch or 2 inches in circumference; and, on the head, 1 or 1 1/2 inch. The clew-rope, when there is one, should be 2 1/2 inches. When sewing on the bolt-rope, one inch of flax-cloth should be taken up in every cloth in the head and foot. To find the quantity of canvas in this sail; multiply the number of cloths by the depth, and add the quantity in the foot-fores, bands, and pieces.

Cross Iland, in Geography, an island in the Atlantic ocean, near the coast of Main, at the entrance into Machias bay. N. lat. 44° 30'. W. long. 67° 15'.—Allo, one of the smaller Shetland islands of Scotland; 35 miles S. of Lerwick.

Cross multiplication, a method of multiplying feet and inches, by feet and inches, or the like; so called, because the members are multiplied cross-wise. See Multiplication.

Cross-pieces, in Ship-Building, a rail of timber extended over the windlass of a merchant-ship, from the knight-heads Vol. X. to the belfry. It is fluck full of wooden-pins, which are used to fasten the running-rigging as occasion requires.

Cross Sound, in Geography, a bay of the North Pacific ocean, on the west coast of North America, discovered by captain Cook on the 3d of May, 1778, and so called from the name given in the English calendar to the day of discovery. This inlet appeared to branch into several arms, the largest of which turned to the northward. The S.E. point of this sound is a high promontory, to which was given the name of Cape Croft. It lies in N. lat. 57° 57' E. long. 233° 21'. The most advanced point of land to the N.W. lies under a very high peaked mountain, to which was given the name of Mount Fair-weather. M. la Perouse, in his Voyage round the World, (vol. i. Eng. ed.) observes, that the entrance into Croft Sound appears to form two very deep bays, where it is probable ships might find very good anchorage. At this Sound the high mountains covered with snow terminate; their summits are from 13 to 1400 toises high. The lands that form the coast to the S.E. of Croft Sound, though 8 or 900 toises high, are covered with trees to the top; and the chain of primary mountains seems to go very far into the interior of the continent. To the northward of Croft Sound is Mount Crillon, which is almost as high as Mount Fair-weather, which lies to the northward of the bay des Francais. These points serve as land-marks to the harbour which they surround; and as their latitude does not differ 15 minutes, one of them, in coming from the southward, may be easily mistaken for the other. Mount Fair-weather is accompanied with two lofty elevated mountains; and Mount Crillon, which is more isolated, inclines its point to the southward. In the vicinity of Cape Croft there is a great number of small islands very thickly wooded, between which are several channels, that may have formed good roads. Captain Cook has called this part of the coast the "Bay of Islands." From Croft Sound to Cape Enganno (the Cape Edgecumbe of Cook) there is an extent of coast of 25 leagues, in which are 25 different harbours; and Perouze says, that three months would scarcely suffice to explore this labyrinth of navigation. Cape Enganno is a low land covered with trees, and stretching far out to sea. Mount St. Hvacnth (Mount Edgecumbe of Cook) rests upon it and forms the frustum of a cone, but rounded off at the top, and is at least two toises high. To the easterly of this mount is an extensive bay, so open to the S. and S.E. winds, which are the most dangerous, that navigators ought to dread anchoring there. Captain Dixon anchored there to trade for furs, and gave it the name of "Norfolk Sound." Its latitude was 55° 5' N., and its longitude 138° 16' W. from the meridian of Paris. Captain Cook perceived the month of this creek May 2d, 1778, but did not anchor there. Its shores are covered with trees, of an equal height with those to the southward of Croft Sound. The summits of the hills are somewhat covered with furs; and they are so pointed and numerous, that their appearance is altered by the least change of situation. These hills are some leagues within the land. Smaller hills lie against their sides, and are connected with a low and undulating bafi, extending as far as the sea. Before the shore lie a great number of islands; for to the northward and southward of Cape Enganno the coast is bordered with islands for the space of 10 leagues. From the extremity of these islands to the cape, called by Perouze "Cape Tchi-ríkow," in honour of the celebrated Russian navigator who landed on this part of America in 1741, are two large bays, appearing to stretch far into the land, and called by La Perouze "Port Neckar" and "Port Gubkot." Dixon an- 3 M chored
chored in one of them, which he called "Port Banks." N. lat. 56° 35', W. long. from Paris 137° 20'. At a small distance lies a cluster of five islands, separated from the continent by a channel four or five leagues wide, which neither captain Cook nor the pilot Maurelle has noticed. La Perouse called them "Isles de la Croisette" from the celebrated French geographer, Delisle de la Croisette, who accompanied captain Tichikinuk, and who died during that voyage, and whose place of interment was discovered by captain Clerke in Kamtschatka. La Perouse, during his stay at Petropavlovika, had an opportunity of retelling this act of kindness with similar liberality; for finding that the inferiors on captain Clerke's tomb had been defaced by the Kamtschadalas, he thought proper to re-establish it, as it occurs in the account of Cook's third voyage, and in order to prolong its duration, he caused it to be engraved on copper. Dixon has distinguished these five islands by the name of "Foggy islands." La Perouse has placed them in 55° 5' N. lat. and 137° 11' W. long.; Dixon in 55° 50' N. lat. and 137° 3' 45" west, reduced to the meridian of 163° 51' 45", La Perouse, being unable to account for his discrepancy of 55° 5' 52" W. long. based on his time-keepers, perceived great openings between considerable islands, at a distance from the continent; which Archipelago commences four leagues to the S.E. of Cape Tichikinuk, and apparently extends as far as Cape Hector. Port Bucarelli of Maurelle is in this part. (See Bucarelli.) La Perouse founds, that from Crofs Sound he had coasted only along islands, and Dixon confirms this opinion. La Perouse, falling along the coast at a distance of 3 leagues, saw the iiles of "San Carlos," the principal of which lies S.E. and N.W., and may be 2 leagues in circumference. A long chain connects it with other little islands, stretching far out into a channel of considerable breadth. The place of the island farthest from the continent, at the distance of half a league, was ascertained to be 54° 28' N. lat. and 136° 10' W. long. Ranging for a considerable distance along the coast, La Perouse discovered a bay, which he called "La Touche bay," N. lat. 52° 35', W. long. 133° 49', affording, as he had no doubt, very good anchorage. Advancing further, he found several islands which apparently belong to the coast of America; and he also perceived four or five small islands near it, which he named "Ilots Kerouart," and the point "Cape Hector," the cape "St. James" of Dixon; which, according to La Perouse, is in N. lat. 51° 57' 20", and W. long. 137° 37', and according to Dixon in 51° 46' N. lat. and 132° 20' W. long., reduced to the meridian of Paris. The opposite coast of "La Touche bay" was named by La Perouse "Cape Bruche;" and the breadth of the channel or gulf, from eait to west, was ascertained to be 30 leagues between Cape Hector and Cape Fleuriu (Cape Cos of Dixon). The situation of this cape is 51° 49' N. lat. 131° 15' W. long. according to La Perouse; and N. lat. 51° 35', W. long. from Paris 135° 32', according to Dixon. This cape forms the point of a very high island. Along the coast he observed clutters of islands, called by La Perouse "Iles Sartine," and by Dixon "the Islands of Beresford;" situated, according to the former, in N. lat. 50° 52', W. long. 131° 58'; and, according to the latter, in N. lat. 50° 51', and W. long. from Paris 135° 51'; possibly lie between these islands, but it would be dangerous to attempt it. The "Windy Point" of captain Cook, forming a continuation of the coast from stout Elias to Nootka, is situated in N. lat. 50° 4', W. long. from Paris 136° 23'. For other observations of this celebrated navigator on the west coast of America, we refer to Port des Francais, and the account of his voyage; and also to Nootka.

Cross, &c. a mathematical instrument, otherwise called the Torque. Cross, in Agriculture, a term applied to a method of harrowing land, in which the harrow is made to pass up the interval it went down before, and down that which it previously passed up. See Harrowing.

Cross-tree, in Ship, cross-pieces of timber set on the head of the mast, and bolted, and let into one another very strongly. They are four in number, and are generally called cross-trees, but strictly speaking, only those which go thwart and are called cross-trees; the other, in the largest ships, are called trellis-trees. Their use is to keep and bear the topsails up; for the foot of the top-mast is always fastened into them, so that they bear all the first. They also bear the tops, and are necessary to all masts which carry any other top, or flag-flaff, at the head.

Cross-tree-yard, is a yard landing square, jut under the mizen-top, and to it the mizen top is fastened below. See Cross-jack and Yard-arm.

Cross-bark, in Mining, are such mineral veins as branch from or cross the principal or rake-veins; if small, these are in Derbyshire denominated Strings, or Sprints, which feet. These cross-veins, according to Jameson, the translator of Werner, take place usually on the over-hanging or upper side of the vein, and lie frequently on the lower or lying side.

Cross, Winter, in Botany. See Erasium.

Crosswort. See Galium cruciatum.

CROSSSEA, in Ancient Geography, a country of Europe, which was a part of Thrace, before the kings of Macedon united it to their kingdom. It was in a peninsula between the Thermaic gulf to the west, and the gulf of Strymon to the east. It contained the towns of Lippos, Combraca, Lita, Gigonos, Campa, Ilima, and Elima. Steph. Byz. and Thucydides call it Cronis, and the former makes it a part of Macedonia.


Gen. Char. Cal. five-leaved; leaves convolute-imbricated; inner ones gradually smaller. Cor. monopetalous; tube flender, enlarged at the base, swelling a little at the infection of the stamens, open at the mouth; border one-lipped, trilab; segments emarginate. Stam. Anters four, nearly fiddle, fringed at the edges of the valves. Fijh. Stigma bifid. Pe- ric. with two-odd cells.

Sp. C. undulatifolia. A pretty large upright shrub, flowering all the year round. Stem cylindrical, jointed; branches opposite. Leaves opposite, ovate-lanceolate, entire, undulated; petals jointed at the base. Flowers in a dense terminal spike, of a dull orange colour; bracteae three under each flower, ending in a sharp bristle; the middle one the largest. Perianth swell'd at the base into a round nutty. Common in the pagoda gardens at Bengal.

CROSSE, a name given by the people of Guinea, and some other parts of Africa, to a kind of fruit very common among them. It very much refembls our common ha-的增长, but that the shell is not so hard. Phil. Trauf.

CROSSE, &c. a 1a, in Geography, the name of a fort in North America, near Beaver river, situated on a low isthmus, in N. lat. 55° 25', W. long. 107° 48'.—Also, a like into which the Shaguanis slrait and rapid lead, in which the course is S. 20 miles, and S.S.W. 14 miles, to the Point au Sable; opposite to which is the direction S. of the Beaver river, bearing S. 6 miles; the lake in the distance
CROSELET, little crofs, a diminutive of crofs, used in Heraldry, where we frequently see the shield covered with croflets; also fitles, or other honourable ordinares charged or accompanied with croflets.

Croflets themselves frequently terminate in croflets.

CROSSEN, in Latin Crofus, in Geography, a small but handfome town of Prufis, in the duchy of Silefia, on the confines of the river Bober with the Oder, 26 miles S.E. of Frankfort on the Oder; E. long. 15° 3' N. lat. 5° 4'.

The country about Crofden is uncommonly fertile, and famous for its orchards and vineyards, the latter of which yield a very good fort of white wine.—Alfo, a small town of Saxony, in the circle of Naumburg Zentz, on a small river called the white Elfer. It has about 600 inhabitants, who derive their principal maintenance from agriculture, and excellent fish ponds.

CROSS, a town of Poland, in the canton of Lublin; 14 miles S.W. of Lublin.

CROSSMALINA, a small town on the point of Maynoyland, on the river Deil, near the northern extremity of Lough Conn. It is on the road from Castlebar to Kilala, and is 124 miles N.W. from Dublin, and 13 miles N. from Castlebar.

CROSSPETALUM, in Botany, Brown. See My- GINDA rhacoma.


Gen. Cal. Cal. topi-flowered, quadrangular, attached by its lower part to the germ, permanent, with four egg-shaped spreading divifions. Cor. Petals four, elliptical; claws narrow; inserted into the calyx; nectarines twenty, filiform, chilted, alternating with the filaments. Stam. Filaments twenty, almoft the length of the calyx, united at the bottom into a short cup; anthers small, roundfih. Pfif. Germ inferior, convex; ftyle the length of the flamens, cylindrical; ligufes four, spreading, laciniate, or fringed. Peric. Berry? hemispherical, flattened, enveloped in its lower part by the calyx. Seeds numerous, globular, attached to a central column.

Uff. Ch. Calyx four-parted. Petals four, inserted into the calyx. Nectarines twenty, alternating with the flamens after they become separate. Stigma four, fringed.


CROSSWICKS, in Geography, a village of America, in the flate of Jefey, and county of Burlington, through which the flages paif from New York to Philadelphia. It has a repectable Quaker meeting-houfe, 4 miles S.W. of Allen town, 8 S.E. of Trenton, and 14 S.W. of Burlington.

CROSTIGAL, a small town of Saxony, in the circle of Leipzig, with 284 inhabitants, which is fo clofe to the gates of the ancient town of Wurtze, that it is confidered as one of its borborus.

CROSTILO, a river of Italy, which runs into the Po, about a mile N.W. from Lazzara, in the duchy of Mantua.

CROTALARIA, in Botany, (from κρόταρον, the name of an ancient nofly brazen instrument; aluding, according to Linnaeus, to the form of the bugle; but, according to others, becaufe the seeds in the ripe legumes make a rattling noise when flaken.) Linn. gen. 862. Schreb. 1172. Wild. 1343. Czrt. 839. Juff. 354. Vent. 3. 39. Clafs and order, diadelpha decandra. Nat. Ord. Papilionaces, Linn. Leguminosae, Juff.

Gen. Ch. Cal. often with three deep divifions; the two upper ones lanceolate, prefling on the standard, lower one lanceolate, 

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diffance run do not exceed 13 miles in its greatest breadth. It now turns W.S.W., the ille a la Croifie being on the south, and the main land on the north; and it clears the one and the other in the distance of 3 miles, the water presenting an open horizon to right and left; that on the left formed by a deep narrow bay, about 10 leagues in depth; and that to the right by what is called "la Riviere Creufe," or Deep-river, being a canal of still water, which is here 4 miles wide.

This lake and fort take their names from the island just mentioned, which received its denomination from the name of the crofs, that forms a principal amument among the natives. The situation of this lake, the abundance of the finest fish in the world found in its waters, the richness of its surrounding banks and forests, in moofe and fallow deer, with the vast number of smaller animals whose skins are precious, and the numerous flocks of wild fowl that frequent it in the spring and fall, make it a moft defirable spot for the conftant residence of fome, and the occasional rendezvous of others, of the inhabidants of this country, particularly the Knifeneaux. Who were the original people that were driven from it when conquered by the Knifeneaux, is not now known, as not a single veftige remains of them. The latter and the Carpeicans are the only people that have been known here; and the laft mentioned evidently confider themselves as Strangers, and seldom remain longer than three or four years without visiting their relations a short distance in the barren grounds, which they term their native country. The Knifeneaux, who for some time treated them as enemies, now allow them to hunt to the north of the track from Fort du Traine upwards; but when they occasionally meet them, they demand contributions, and punish refidience with their arms. When the Europeans first penetrated into the country, in 1777, the people of both tribes were numerous; but the small pox was so fatal, that there does not exist of the one, at present, more than 40 resident families, and the other has been from about 30 to 200 families. Since traders have spread themselves over this country, it is no more the rendezvous of the errant Knifeneaux, few of whom want to return, particularly from the country of the Beaver river, which they had explored to its source in hunting and war excursions, and as far as the Saltatchwine, where they sometimes met people of their own nation, who had proscribed similar conquests up that river. From thence they returned in the spring to the friends they had left; and met with others, who had penetrated, with the same designs, into the Athabasca country. When they met, they occupied their time in fealing, dancing, and other paftimes, which were occasionally fup- plemented for fervice and religious foemity; while the narratives of their travels, and the history of their wars, amufed and animated their festival. After a short interval spent in this manner, they prepared for their annual journey to Churchill, to exchange their furs for fuch European articles as they wanted. The length of the way, and the length and form of the feafon, demanded dispatch; and in this bufinefis the moft active men of their tribes, and fome young women, engaged; remaining at Churchill factory but a little while for bartering their commodities, and indulging themselves with fpiriting liquors. From ille a la Croifie fort it is not more than two miles to a point of land which forms a check of that part of the lake called the "Riviere Creufe," which preserves the breadth already mentioned for upwards of 20 miles; then con- tracting to about two, for the distance of 10 miles more, it opens to "lake Clear." Mackenzie's Voyages from Montréal, &c. Introduction.
lanceolate, concave, three-cleft, supporting the keel; sometimes with five deep, nearly equal divisions. Cor. papiponae-
ceous; standard generally large, somewhat heart-shaped, acute, depreved on the sides; wings egg-shaped, often about half the length of the standard; keel acuminate, recurved, more common about the length of the wings. Stam. Filaments all united towards the base into a membranous sheath, with a suicide at the back; anthers fimbri. Fil. Germ superior, oblone, often bifid: style simple, bent inwards, ascending; stigma obtuse. Peric. Legume often pedicelled, more commonly short and turgid, one-celled. Seeds generally few, roundish-kidney-shaped. Eff. Ch. Legume turgid, inflated; filaments conuate, with a dorsal suture.

* Leaves simple.*

Sp. 1. C. perforata. Linn. Sp. Pl. 2. Mart 2. Lam. 1. Dill. ed. tab. 102. (Rafnia perforata; Willd.) "Leaves perforate, cordate-egg-shaped." Stem apparently shrubby, but the branches perish every year, two feet high or more, branches cylindrical, smooth, leafy. Leaves alternate, smooth, fllis, veined. Flowers yellow, axillary, solitary, on very short peduncles. Legumes smooth, rather short, inflated. A native of open woods in the back part of Carolina. 2. C. amplexicaulis. Linn. Sp. Pl. 3. Mart 3. Lam. 2. (Rafnia amplexicaulis; Willd. Thunb. Genilia perforata; Sch. thes. 1. tab. 24. fig. 5.) "Leaves all heart-shaped, embracing the item, reticulately veined, alternate; floral ones opposite, coloured; flowers solitary, axial." A perfectly smooth shrub. Stem a foot and half high, fllender, leafy; branches alternate, very fllender. Leaves entire. Flowers yellow, amnol fllile; two upper divsisons of the calyx large, truncate with an oblique point; standard roundish, raised. A native of the Cape of Good Hope. 3. C. reniformis. Lam. 3. "Leaves cordate-kidney-shaped, embracing the item, reticulately, smooth; floral ones elliptical, legumes compressed, solitary, nearly fllise." Branches smooth, woody. Leaves larger and rounder than those of the preceding species, entire. Legumes from nine lines to an inch long, smooth. Calyx as in the preceding species. A native of Africa. 4. C. tenuiformis. Lam. 4. "Smooth; leaves ovate-wedge shaped; lower ones retuse; uppermost inerfice, eggl-shaped, mucronate; floral ones nearly opposite." Stems somewhat woody, full of pith, not so thick as a gookrl, smooth, leafy; branches fllmple, with one or two leaves at the summit. Stem leaves alternate, axillare, fllise, not reticulately from eight to ten lines long, and seven or eight broad. Flowers yellow, axillary, solitary, peduncles shorter than the leaves; calyx smooth, short. A native of Africa. 5. C. capitata. Lam. 5. "Villous; leaves lanceolate, scattered, crowded, 5 file; flowers in heads." Stem woody, cylindrical, leafsl: marked with fattered, somewhat callous scars; brancher near the top; flowers fasscated, ascending, leafy their whole length. Flowers slightly convex above, entire, file or seven lines long. Flower variegated with purple-violet and white; calyx rather short, with five divisions, obtuse at its base; ilaments diadophous; germ thickly ftted with reddish hairs. A native of the Cape of Good Hope, to C. chinensis. Linn. Sp. Pl. 5. Mart 5. Lam. 6. Wildl. 4. and 21. "Leaves eggl-shaped, somewhat petioled; fllipes very minute." Lam. "Villous-fllise; leaves ovate, oblong, obtuse, somewhat petio-

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The length of the corolla; corolla yellow, with a fristed hanner; fllipes awl-shaped. Linn. Whole plant clothed with reddish hairs, which are fllky on the young shoots. Stems woody, full of pith, with numerous simple branches. Leaves alternate, numerous; lower ones near two inches long; upper ones very small; fllipes four or five lines long, commonly several together in a kind of fascice. Flowers in short racemes, which form a terminal panicle; bractes lanceolate, three or four lines long. Legumes scarcely five lines long, small, ovate, inflated, villous. A native of China and the island of Java. Obi. La Marche rates his plant to be the chinensis of Linnexus. Willdenow thinks it distinct, and has taken it up feapartially as such, and called it panicula.-Their respective descriptions do not appear to us to be absolutely inconsistent with each other, though the resemblance is not striking. The half five species were communicated by Sonnerat to La Marche, who described them from dried specimens. 7. C. sagittalis. Linn. Sp. Pl. 1. Mart 4. Lam. 7. Wildl. 1. (C. americana, caule alato; Mart. cent. tab. 53. C. hifuta minor; Herr. Lugd. tab. 203. Pluk. Alm. 122. tab. 169. fig. 6. Sagittaria cordalilis. Marcg. hist. 1. 55. B. C. Sagittalis glabra; Pluk. Alm. 122. tab. 169. fig. 6.) "Leaves lanceolate; fllipes decu-

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sant, solitary, two-toothed." Linn. Root annuall. Stem about a foot high. herbaceous, erect, fllf, pubescent, branched. Leaves alternate, entire, rounded at the base, on short petals, hoary underneath, and somewhat hirtule, but fortimes smooth; fllipes at the sides of the petals, bifid, with two open teeth, fo as to appear fagitate. Flowers pedicelled from three to five, in short peduncled racemes, at the top of the item and branches; calyx nearly or quite as long as the corolla, clothed with reddish hairs, divided into five ovate-lanceolate segments. Legumes from two to fifteen lines long, almoll fllile in the calyx, inflata, velutina-

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mum, smooth. A native of Virginia, the Well Indies, and Brazil. 8. C. parviflora. Wildl. 2. Roth. Cat. 1. 83, and 2. 84. "Leaves lanceolate; upper fllipes decurrent, very fllily two-toothed." Root annuall, very similar to the preceding, but smaller in all its parts. A native of Virginia and Carolina. 9. C. ruhisinga. Wildl. 3. "Leaves lanceolate, villous; upper fllipes lanceolate, decurrent; calyx villous." Root annuall. A plant the length of a finger, branched, villous. Stem and branches, especially the younger ones, befet with numerous, spreading, ferrugineous hairs. Leaves an inch long, oblong-lanceolate, on short petals; fllipes on the upper part of the item towards the flower oblong-lanceolate, deciduall. Flowers about four in a raceme, yellow; calyx the length of the corolla or longer, covered with ferrugineous hairs. Legume turgid, obtuse, mucronate with the permanent style. A native of the East Indies. to C. aspilioides. Lam. 8. "Leaves linear, acute, villous underneath; corollas and legumes included in the very hirtulae ferrugineous calyx." Stem a foot high, or a little more, amnol, cylindrical, rather fllender, full of pith, naked towards the base, leafy, and clothed with reddish hairs on the upper part. Leaves two or three inches long, alternate, narrow; fllipes small, narrow, villous. Flowers fllile, drooping, in a terminal raceme; calyx oval-campanulate, completely concealing both the flower and the legume, with fine eret, obtuse-

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segments. Legumes oval, inflated, terminated by a style similar to that of C. chinensis. Found by Commerfon in the island of Java. 11. C. glanca. Wildl. 5. "Leaves linear, lanceolate, smooth, peduncles axillary, about three-

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flowered." Stem a foot high, eret, branched from the base; branches eret. Leaves an inch and half long, nearly fllile, glaucous; fllipes feaeely apparent. Peduncles twice the.
the length of the leaves; corolla larger than the calyx.
A native of Guinean. 12. C. fruticosa. Mart. 28. Mill. Howit. MSS. "Leaves linear-lanceolate, hirtute; petioles recurve; stem pubescent." Stem four feet high, taper, with numerous slender branches. Flowers small, dirty yellow, alternate, three or four in a loose spike. Legumes about an inch long, very tubed, dark blue when ripe. A native of Jamaica; cultivated by Miller. 13. C. juncea. Linn. Sp. Pl. 6. Mart. 6. Wild. 6. Hort. Kew. 3. Bot. Mag. 490. (C. banghafensi; Linn. 9. Philk. aln. 132. tab. 169. fig. 5.) "Leaves lanceolate, nearly sessile; stem pubescent." Linn. "Stem rod-like, simple; leaves lanceolate, nearly sessile; lower lip of the calyx three-parted beyond the middle." Stem. The habit of a fritsia. Root annual. Stem three or four feet high, angular, stiff, rather slender, leafy, branched. Leaves alternate, covered in native specimens with soft silvery hairs, but only slightly pubescent when cultivated in the European floras. Flowers in terminal racemes, large, deep yellow, resembling those of the Spanish broom; calyx villous, almost filiform; standard large; keel much bent, acute, two-veined, paler than the standard; filaments scarcely united at the base, five of the anthers erect, long, linear; five short, oval, incumbent; germ filiform, oblong-conical, hairy, style bent, pubescent. A native of the East Indies. Linn. Linn. Linn. The calyx has very long, slender pubescence, has referred to that now before us the name given it by Pluknet; but as it is known and cultivated in this country under the Linnaean name, we have given a new one to the next species, to which the other synonyms of Linnæus and the description in Richard's edition belong. 14. C. tridentata. (C. juncea; Lam. Tandall-cotti; Rheed. Fl. 9. 47. tab. 26. Rai. Hist. 3. 464. n. 9.) Stem branched at the base; leaves wedge-lanceolate, somewhat petiolate; lower lip of the calyx three-toothed." Lam. 3. C. faricea. Burm. Ind. 156. tab. 48. fig. 1. Stems slightly fluted, branched. Leaves near together, enlarged towards the summit, terminated by a sharp point, smooth and dark green above, pubescent and a little silky underneath. Flowers in short terminal racemes, which are more leafy than those of the preceding species; stem smooth. A native of the East Indies. Linn. The calyx has very long, slender pubescence, has referred to that now before us the name given it by Pluknet; but as it is known and cultivated in this country under the Linnaean name, we have given a new one to the next species, to which the other synonyms of Linnæus and the description in Richard's edition belong. 15. C. farica. Wild. 7. Retz. Obl. 57. 26. "Leaves lanceolate, finely serrated; stems silky, raceme terminal; stem pubescent." Root annual. Stem three or four feet high, in a loose raceme, drooping, in a loose raceme. Leaves short, obtuse. A native of the East Indies. Linn. The calyx fusiform, which it does not materially differ from Burman's farica. 17. C. retia. Linn. Sp. Pl. 8. Mart. 8. Lam. 11. Wild. 13. Ser. tab. 148. fig. 3. (C. allatica folio linnarii cordiformi; Herm. Linn. 260. tab. 201. Turn. 642. C. major; Rumph. An. 5. 278. tab. 96. fig. 1. Dolichos cuneifolius; Forl. Egypt. 134. Tandall-cotti; Rheed. Mal. 9. 44. tab. 25. Ried. Supp. 343.) "Leaves oblong, wedge-shaped, retuse." Root annual. Stem from two to four feet high, branched, leafy, branched. Leaves alternate, quite obtuse, smooth on both sides; filiform small, awl-shaped. Flowers yellow, in a terminal raceme; calyx nearly smooth; upper lip with two ovate-lanceolate divisions; lower one with three acute teeth. Legumes smooth, wider upwards, inflated, tubed at the sides, depreved along the semilunar future, gradually attenuated into the peduncle. Seds from fifteen to twenty. A native of the East Indies. 18. C. curviloba. Lam. 12. "Leaves linear lanceolate, smooth, flattened, filiform; racemes short, few-flowered; calyces and leguminous sheath. A shrub with the habit of a broom. Branches slender, cylindrical, smooth and slightly tubercled towards the base, leafy almost their whole length, a little villous towards the summit. Leaves scarcely an inch long, mucronate. Flowers in axillary racemes; calyx flat or concave at the base, with five oval-lanceolate divisions, particularly villous at the edges; keel much bent. Legumes covered with reddish hairs. A native of the Cape of Good Hope. 19. C. inbricata. Linn. 7. Mart. 7. Wildl. 9. (Borbonia axillaris; Lam. Cyptis affinis; Philk. Mart. 63. tab. 388. fig. 3.) "Leaves oblong, silky, shining; flowers axillary, sessile, near the top of the branches." A small shrub. Leaves acute, filiform, somewhat imbricated, without filipules. Flowers purple, solitary; calyx clothed with red silky down; divisions very acute. A native of the Cape of Good Hope. 20. C. villata. Mart. 29. Mill. Linn. Hort. Cht. 397. Herm. Lugdub. 170. "Leaves egg-shaped, villous; petals entire; filaments cylindrical; a shrub about five feet high; a little hairy underneath. Leaves bearing close to the branches, roundish, hairy, green, left to the touch. Flowers blue, in loose racemes. A native of the Cape of Good Hope. 21. C. parviflora. Wildl. 10. Thunb. Prod. 124. "Leaves egg-shaped, acute, tomentose; flowers axillary, nearly sessile; legumes egg-shaped." 22. C. lanata. Wildl. 11. Thunb. 124. "Leaves egg-shaped, acute, woolly; flowers axillary, nearly sessile." 23. C. reflexa. Wildl. 12. Thunb. 125. "Leaves egg-shaped, acute, tomentose, reflexed; flowers in heads; branches retroflexed." The last three are natives of the Cape of Good Hope. 24. C. f REPORT. Linn. Sp. Pl. 9. Mart. 9. Lam. 13. Wildl. 14. "Leaves lanceolate, nearly sessile; flowers sessile, lateral; stem equal." Root annual. Stem scarcely a foot high, erect, cylindrical, filiform, pubescent, but little branched. Leaves smooth above, hairy underneath; filipules scarcely visible. Flowers blue, axillary, with two oblong bracts. A native of China. 25. C. trifida. Linn. 15. Mart. 10. Lam. 14. Bot. Mag. 183. (Rafnia trifida; Willd. 4.) "Leaves egg-shaped, sessile, smooth; branches angular; peduncles high, three, lateral, one-flowered." Root biennal. Whole plant smooth. Stem three or four feet high, strong, often unbranched. Leaves three inches long, large, numerous, very handsome when young, becoming glaucous as the plant advances. Legumes generally containing only one seed. A native of the Cape of Good Hope; introduced into Kew garden by Maflon, in 1786. It is a green-house plant, readily propagated by seeds, which will ripen in the open air in our climate, if the weather be favourable. 25. C. verrucosa. Linn. Sp. Pl. 11. Mart. 11. Wildl. 15. (C. angoula; Lam. 16. C. affinis. folio linnarii verrucoso; Herm. Linn. 199. Tour. 644. Rai. Hist. 1893. C. cunealis; Jacq. 1st. 14. tab. 144. C. folis foliariis; Burm. Zeyl. 81. tab. 34. Pre-tandall-cotti; Rheed. Mal. 9. 53. tab. 29.) "Leaves somewhat egg-shaped; filipules elongate-shaped, embracing the stem; stems quadrangular, pubescent." a. "Leaves egg-shaped. Root annual. Stem a foot and half to two feet high, erect, 253-253, branched,
CROTALARIA.

Branched, with four very remarkable acute angles. **Leaves** near two inches long, alternate, somewhat petioled, green, almost smooth, warted, (but La Marek thinks it probable that this is rather accidental than constant.) **Flowers** light blue, drooping, in peduncled terminal racemes; standard frilled on the outside; calyx smooth, with lanceolate segments. **Legumes** an inch long, turbid, almost cylindrical, fleshy in the calyx, villous only when young. A native of the East Indies, on the coasts of Malabar and Coromandel. The motives call it Vati quiquilque-pé, the plant that rattles, in allusion to the noise which the ripe pods make when shaken. 

**Leaves** halate-lanceolate, very acute. Found by Commeron in theÎles de France and Bourbon. 

**Legumes** three inches long, roundish-egg-shaped, obtuse, pubescent. A native of the East Indies. 31. C. bifaria. Linn. jun. Supp. 322. Mart. 15. Lam. 19. Wild. 20. **Lower leaves roundish; upper ones ovate-lanceolate; filaments reflexed; peduncle terminal, one-flowered.** **Stems** diffuse, cylindrical, pubescent. **Leaves** in two opposite rows, on short petioles, widely spreading; **filaments** egg-shaped, tubular. **Flowers** binec, rather large; **peduncles** erect, long, filiform; **bracteae** two on the peduncles, often 3 or 4, obtuse. **Legumes** oblong, with a point hispid. Observed by Koenig in the sandy parts of the garden of the queen of Toulouse. 33. C. opposita. Linn. jun. Supp. 312. Mart. 13. Lam. 17. (Spartium capense; Linn. Sp. Pl. Liparia; Syll. Veg. ed. 12. Cytisus capenfis; Berg. cap. 217. Rafnia opposita: Willd. 970. Genilia; Horn. Afr. 11.) Smooth, without filaments; leaves oblong, fleshy; **peduncles** axillary, two-leaved. **Stems** simple, (branched, Berg.) quite smooth. **Leaves** obtuse, erect, (two inches long or more, linear-lanceolate, Berg.) **Flowers** yellow, drooping, axillary towards the top of the stem; **peduncles** long, with two opposite bracteae near the flower, which resemble the leaves of the stem; stamens diadelphous. A native of the Cape of Good Hope. Authors have been much at a loss what to do with this plant. It has already had several names; and La Marek presumes that it cannot be suffered to remain long in this genus, where the younger Linnaeus has placed it. Wildenow has accordingly removed it to ratisia, taken up from Thunberg; but as we have not yet been able to make up our mind, with respect to that new genus, we have let it rest here for the present.

**Leaves** compound.

33. C. latifolia. Linn. Sp. Pl. 12. (misprinted latifolia.) Mart. 16. Lam. 20. Wild. 22. Dil. & Lib. 127. tab. 102. fig. 131. (C. trifolia fruticosa; Sloan. Jum. 114. Hift. 2. 1833. tab. 176. figs. 1, 2.) **Leaves** ternate; **leaflets** inversely egg-shaped, smooth; **racemes** lateral, few-flowered; **legumes** filiform in the calyx. **Stems** a foot or a foot and half high, slender, weak, cylindrical, hard and woody towards the base, tender, and herbaceous above; branches numerous. **Leaves** petioled; **leaflets** smooth, egg-shaped; **filaments** two at the base of each petiole, small, narrow. **Flowers** yellow; standard streaked with purple above; **peduncles** axillary, commonly shorter than the leaves, three or four flowered. **Legumes** inflated, slightly hairy. A native of Jamaica and South America. 34. C. pubera. Wild. 23. Vahl. Eclog. 2. 55. **Leaves** ternate; **leaflets** oblong, obtuse, villous beneath; **legumes** in racemes, villous. **Stem** perennial. **Branches** woody, cylindrical. **Leaves** petioled; **petioles** half an inch long, cylindrical; **leaflets** on very short petioles, acute at the base, without veins or nerves, pale green, mucronate; **filaments** awl-shaped, minute, deciduous. **Flowers** small, remote; **racemes** axillary and terminal, longer than the leaves; **bracteae** minute, brille-shaped; **segments** of the calyx lanceolate. **Legumes** scarcely half an inch long, oblong, pendulous. A native of the island of St. Martha. 35. C. argentea. Wild. 24. Jacq. Hort. Schoenb. 2. 50. tab. 220. **Leaves** ternate; **leaflets** lanceolate, hoary; **peduncles** one-flowered, solitary; **calyxes** three-parted. A thrub, three feet high, with the habit of a coronilla, and zig-zag hoary branches. **Leaves** hoary; **leaflets** rather obtuse, shorter than the petiole. **Flowers** yellow, opposite to the leaves at the tops of the branches; calyx the length
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Of the corolla. Legumes lanceolate, somewhat compressed. A native of the Cape of Good Hope. 36. C. marnierii. Linn. Sp. Pl. 13. Mart. 17. Lam. 22. Wildl. 25. "Leaves ternate; leaflets eggl-shaped, acute; stipules semicordate, crescent-shaped." Stem erect, tesselated, branched, winged, zig-zagged. Leaflets green and smooth above; villous, whitish, and shining underneath, equal; sessile on the common petiole; stipules with the point directed to the leaf. Flowers towards the summit of the branches; peduncles one-flowered, opposite to the leaves, solitary; bracteae three, awl-shaped, shorter than the calyx, forming a kind of involucre to each flower. A native of Africa. 37. C. laburnifolia. Linn. Sp. Pl. 14. Mart. 18. Lam. 23. Wildl. 26. (C. asifian fruticentis; Herb. Lughb. 156. tab. 157. Ra. Holt 189.) C. arborescens; Burm. Zeyl. 82. tab. 35. Nella tand北京市: "Leaves ternate; leaflets eggl-shaped, acuminate, smooth; stipules none; raceme terminal; legumes pedicellate." A shrub, three feet high or more, quite smooth, branched; branches slender, cylindrical, even-furrowed, leafy. Leaves on long petioles; leaflets green, rather smooth, greenish beneath. Flowers towards the summit of the branches, in long lateral racemes, a little below the summit of the branches; calyx rather short, especially the upper lip; keel larger than the other petals, compre-ff, much bent, with a reverted beak. Legumes smooth, inflated, hanging out of the calyx, by a pedicel at least an inch long, terminated by the curved style. A native of the East Indies. 38. C. microphylla. Wild. 27. "Leaves ternate; leaflets obovate-obtuse, pubescent underneath; racemes axillary, aggregate, shorter than the petiole." Root perennial. Branches cylindrical. Leaves alternate, on petioles two inches long; leaflets four inches long, three-nerved, veined, smoothish above, pubescent underneath; middle one narrowed at the base; the others oblique. Racemes an inch long, somewhat compact, numerous; calyx two-lipped; corolla falcate. Legume half an inch long, oblong, acute, turbid, generally with one small, roundish beak. A native of the East Indies. A plant, with the habit of Medicago; but the flower and fruit of crotalaria. 39. C. leucantha. Lam. 21. Wildl. 28. "Shrubby, smooth; leaves ternate; leaflets obovate-elliptic, smooth; flowers lateral, few flowered; legumes pubescent in the calyx." Branches woody, slender, cylindrical. Leaves small, alternate; leaflets only three or four lines broad. Flowers yellow, from two to four on an axillary peduncle, a little longer than the leaves, with an awl-shaped bract. Legumes half an inch long, oval, inflated, terminated by the twisted reflexed style. Found by Commodore in the island of Madagascar. 40. C. trifoliatum. Wildl. 29. "Leaves ternate; leaflets wedge-shaped, emarginate, shorter than the common petiole; raceme terminal." A plant with the habit of mellilot. Branches two feet long, simple, cylindrical, erect. Leaflets an inch long, smooth above, cloathed with adpressed hairs, when seen under a lens underneath; stipules bristle-awl-shaped. Racemes three or four inches long, terminal; sometimes with one or two-flowered axillary peduncles. Legumes yellow. Legume roundish, turbid, pubescent. A native of the East Indies. 41. C. corradii. Linn. Mant. 269. Mart. 19. Lam. 25. Wildl. 30. (Spartium phosporoideae; Berg. cap. 198. Hypocalyptra tubiflora; Thunb. Prod. 124.) "Leaves ternate; leaflets inversely heart-shaped, mucronate; flowers in corymbs; stem shrubby." A shrub eight feet high; branches purple, somewhat angular, rugged with truncated scars. Leaves petioled; leaflets smooth, almost equal, petiolate, nervetd, plaited lengthwise, purplish above, glaucous underneath, the size of a finger nail; stipules bristle-shaped, minute. Flowers purple-violet; corymbs terminal, solitary. A native of the Cape of Good Hope. 42. C. pilosula. Wildl. 31. Thunb. Prod. 125. "Leaves ternate, hairy; leaflets ovate-obtuse, acuminate; flowers terminal." A native of the Cape of Good Hope. 43. C. fistulosa. (C. villosa; Wildl. 32. Thunb. 125.) "Leaves ternate, villous; leaflets obtuse; spikes terminal." A native of the Cape of Good Hope. Another plant from the Cape of Good Hope, cultivated by Miller, having been previously called C. villosa. (See n. 20.) We have given a new name to the present. 44. C. axillaris. Wildl. 33. Hort. Kew. 3. 20. "Leaves terminal; leaflets ovate-elliptic, hairy underneath; stipules awl-shaped, minute; peduncles axillary, in pairs, one-flowered." Root annual. Branches furrowed. Leaves alternate; leaflets acute, mucronate; stipules hairy. Flowers yellow. Legumes hairy. A native of Guinea. 45. C. incanaeformis. Linn. jenn. Supp. 323. Mart. 21. Wildl. 34. Hort. Kew. 5. 20. (C. axillarum; Lam. 24. C. cepenulis; Thunb. 127.) "Leaves ternate; leaflets inerely eggl-shaped; stipules resembling the leaves petioled; racemes terminal; legumes pedicellate." A handsome plant, with a few feet high, with the habit of a crucifer. Stem arborescent, with a prickly bark, much branched towards the top; branches short, leafy, cylindrical; covered with a fine, very short, whitish down. Leaves petioled; leaflets obtuse, green, on whitish petioles; stipules two, opposite, heart-shaped, deciduous, much smaller than the leaves. Flowers large; standard larger than the keel, recurved towards the p'duncle, bright yellow, flared at the base, on the inside; spotted with purple brown on the back; wings bright yellow; keel pale, ruffled and greenish at the base; filaments connate, but almost diadelphous; anthers oblong, fawn-coloured. A native of the Cape of Good Hope, and of the Isles of France and Bourbon. Le Marec observes that as it is called in the Isle of France Bagnadourer, the French name for the bladder fern (Culcuta) of our English nursey-men, the legumes are probably much inflated. 46. C. incana. Linn. Sp. Pl. 15. Mart. 20. Lam. 26. Wildl. 35. Jacq. Offb. 44. tab. 82. Swartz. Offb. 278. Cav. le. 4. 11. tab. 32. (Anonis americana, folio latitu frutisbrotonii; Tour. 469. Crotalaria folis rotundis means; Thunb. fam. Hist. 2. 34.) "Leaves ternate, leaflets oval, villous underneath; racemes spike-shaped; keel toothed at the edge; legumes falcate, bifid." Root annual. Stem from two to five feet high, erect, almost fimple, pubescent. Leaves petioled; leaflets obtuse with a small point; petals pubescent; stipules bristle-shaped, solitary, deciduous. Flowers yellow, rather large, pedicelled; bracteae filiform; one at the base and two at the top of each pedicle under the calyx; calyx pubescent, with lanceolate divisions. Legumes inflated, villous, pendant, sessile in the calyx. A native of the West Indies. Dombey sent from Peru in 1779, what appears to be a variety, with longer leaves, rather larger flowers, and a denser spike. 47. C. furfuracea. Lam. 27. (C. indigofera; Sonnerat. Herb.) "Villos; leaves ternate; leaflets obovate-wedge-shaped, refuted, terminated with a minute point; standard of the corolla purplish above." Root annual. Stem from one to three feet high, erect, often simple, hard, cylindrical, covered with loose woolly hairs. Leaves green, nearly smooth on both sides; petals villous like the item; partials ones half a line long; stipules bristle-shaped, villous. Flowers small, yellow, drooping, in loose lateral racemes just below the top of the item; calyx nearly as long as the corolla; villous, with narrow-lanceolate divisions; standard not reflexed; bracteae villous. Legumes from twelve to fifteen lines long, inflated, villous, pendant, sessile in the calyx. A native of Madagascar and the Isle of France; cultivated at Paris. 48. C. colo- tricules.
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leaves. Lam. 28. (Genista fimilis; Pluk. tab. 157. fig. 3. without the fructification.) "Leaves ternate; leaflets inversely egg shaped; racemes loose, terminal; legumes velvety, smooth, pedicelled, defluitté of the style." Branches cylindrical, full of pith, smooth, leafy. Leaves obtuse, with a scarcely perceptible point, smooth above, thinly set with hairs underneath; petioles shorter than the leaflets. Flowers in loose terminal racemes from one to three inches long; calyx short; upper leaf truncated, bifid; lower one with three short dilated teeth; filaments connate in a cylinder more than two-thirds of their length. Legume an inch long, smooth. Communicated by Sonnerat, it is supposed, from Africa. Cultivated at Paris. 49. C. glecina. Lam. 29. (C. atacites hirsuta; Herm. Loghd. App. 663. from the herbarium of Jussieu.) " Villos; leaves ternate; leaflets oval, lateral ones glibous outward." Root annual. Branches cylindrical. Leaves petioloed; middle leaflet petioled, nearly inversely heart-shaped, often obtuse, with a very small point; stipules small, oval-acut?. Flowers apparently red, drooping, in terminal racemes; calyx villous, with narrow-lanceolate divisions; germ covered with woolly hairs. A native of the East Indies. 50. C. uncinilla. Lam. 30. "Leaves ternate; leaflets egg-shaped; stipules none; legumes ferotiform, filky, scarcely longer than their terminal hooked style." A very branching shrub, about a foot and half high. Branches slender, cylindrical, pubescent. Leaves alternate, petioloed; leaflets smooth above, clothed with fine and close preordial hairs underneath; middle one as long as the common petiole. Flowers small, in lateral and terminal racemes; calyx villous; peduncles almost filiform. Legumes about the size of a pea, clothed with a fine ruff, down. A native of the island of Bourbon, p. revered in the herbarium of Commenner. There is a variety in the herbarium of Jussieu smooth in all its parts, with smaller leaves and yellow flowers, the standard slightly frillated behind, the keel bent and terminated by a straight beak as in the next species. There is another variety from Madagascar, preserved in the herbarium of Commerson, with much larger smooth fruit. And a third in Adanson's herbarium of Senegal, now posified by Jussieu, with villous smaller leaves, and villous fo-mewhat larger legumes. 51. C. medicalginus. Lam. 31. "Leaves ternate; leaflets cordate-wedge-shaped; keel horned; legumes ferotiform, shorter than their terminal reflexed style." A plant with the habit of medicago polymorpha. Linn. Branches somewhat woody at the base, very slender, cylindrical, compound; clothed with short hairs, cottony near the summit. Leaves alternate, very small; leaflets clothed with short depressed hairs underneath, a little longer than the common petiole; stipules very small, awl-shaped. Flowers very small, from three to five together; peduncles-lateral, filiform, opposite to, and longer than the leaves; calyx villose, with five lanceolate divisions; keel bent near at a right angle, terminated by a long, conical, straight horn, a little twisted at the top; standard shorter than the keel, and reeling upon it, pubescent and frillated on the back. Legumes scarcely the diameter of a lentil, pubescent. A native of the East Indies, communicated by Sonnerat. 52. C. pteoralis. Lam. 32. "Leaves ternate; leaflets oblong, obtuse, longer than the petiolo; spikes axillary, slender, elongated." Stem apparently a foot and half or two feet high, somewhat zig-zag, obtusely angular, full of pith, tomentous towards the top. Leaves alternate, on very short petioles; stipules lanceolate, the length of the petiolo. Flowers small, leaflike; bracte bristle-shaped. Legumes oval-rhomboidal, slightly inflated, villous, terminated by the recurved style. Found by Commerson in the Island of Madagascar. 53. C. pallida. Mart. 26. Willd. 30. Hort. Kew. 3. 29. "Leaves ternate; leaflets lanceolate, smooth; racemes terminal, reflexing spikes." Root annual. Flowers pale-coloured. A native of Africa, found by Bruce. 54. C. longifolia. Lam. 33. Willd. 37. (C. guianensis; Aubl. guian. 2. 791. tab. 305.) "Leaves ternate; leaflets lanceolate, smooth; peduncles axillary, aggregate, one-flowered; legumes tetragonal." Root perennial. Stems a foot high or more, angular, leafy, with short branches. Leaves alternate, on very short petioles; leaflets four or five inches long, near an inch broad, nerved, veined, middle one longer, slightly petioloed; stipules, two at the base of each common petiole, lanceolate; two at the base of each leaflet, rather long, very acute. Flowers purple, from two to four together, on very short pedicelles; calyx long, enveloped at its base by two bracteal scales. Legume smooth, inflated, oblong, acute. A native of Guiana. 55. C. angustifolia. Willd. 38. Jacq. Hort. Schoen. 2. 49. tab. 210. (C. elongata; Thumb. pr. d.) "Leaves ternate; leaflets lanceolate, hoary, silky, shorter than the petiole; raceme terminal." Root perennial. Racemes three inches long. Flowers dull white. A native of the Cape of Good Hope. 56. C. linear. Lam. 34. Willd. 39. "Leaves alternate; leaflets linear-lanceolate, on short pedicelles, villos, marked with lines; legumes short, hiuritate, in racemes." Lam. "Leaves ternate, tomentous underneath; nerved; filament decumbent." Thumb. A shrub. Branches cylindrical, frillated, cottony towards the summit. Leaves alternate; petioles nearly a line long, villous; leaflets from one to two inches long, about four lines broad, villous, with numerous lateral nerves; middle one a little longer, somewhat petioloed; stipules two, lanceolate. Flowers from five to nine in a raceme, alternate, leaflike. Legumes four or five lines long, inflated. Communicated to La Marc by Jussieu. Thunberg's plant is a native of the Cape of Good Hope. 57. C. tenuifolia. (C. gonioides; Willd. 40.) "Leaves ternate; leaflets linear-wedge-shaped, emarginate; raceme terminal." Whole plant pubescent. Branches somewhat woody, compound. Leaves on a very short common pedicelle; stipules awl-shaped. Flowers small, yellow. Legumes half an inch long, roundish egg-shaped, scutellate. The habit of a gerilla. A native of the East Indies. Willdenow ought to have observed that the trivial name gonioides was pre-occupied by La Marcé, whose work was certainly before him, though he did not chuse to take up many of its peculiar specific's, even some which are desribed from living plants by fo eminent a botanist. 58. C. floribunda. Mart. 24. Hort. Kew. 3. 19. "Leaves ternate; leaflets wedge-shaped; branches pubescent; legumes pedicelled, smooth, wrinkled, keeled." Root perennial. A native of the Cape of Good Hope. 59. C. microphylla. Willd. 41. Vahl. Symb. 1. 52. "Leaves ternate; leaflets oblong; peduncles lateral, two-flowered; filament decumbent." Stem a foot long, woody, filiform, cylindrical, smooth, branched. Leaves petioloed, remote; leaflets two lines long, nearly selfe, smooth, thickish; common petiole the length of the leaves; stipules bristle-shaped, spreading, half the length of the petiole. Flowers pedicelled. Legume oblong, smooth, on a very short petiole. A native of Arabia Felix. 60. C. volubilis. Willd. 42. Thumb. pro. 125. "Leaves ternate; leaflets smooth, inversely egg-shaped, obtuse; flowers axillary, solitary." A native of the Cape of Good Hope. 61. C. heterophylla. Linn. jun. Supp. 323. Mart. 32. Willd. 35. Willd. 43. "Leaves ternate; leaflets elliptical, emarginate; lower leaves simple." Root annual. Stem a foot high, erect, smooth, a little branched near the top. Leaves smooth, nerved, on very short channelled pedicelles; stipules small, awl-shaped, spreadd. Flowers yellow, frillated, in a terminal

**Crotalaria aifana**; Berg. See *Glycine monophylla*.

**Crotalaria perforata** Lam. See *Borbonia perforata*.

**Crotalaria scolaniae argentea tosa**; Herm. See *Sophora tomentosa*.

Oolf. From only a cursory survey of the descriptions in the above numerous lists, it is but too evident, not only that some of the species do not correspond with the genuine character as it now stands, even after the very liberal modifications that we have given it; but also that it would not be easy, perhaps not possible, to include them all in any precise generic character whatever. Jullian has observed that this genus wants revisal, and that none of the present species ought to be removed. La Marek has accordingly removed *Crotalum* (n. 19.), to borbonia, and thinks that *perfoliata*, amplexicaulis, and *reniformis* (n. 1, 2, 3.), ought with propriety follow it. Willdenow has arranged the three former of these, and some others, under Thunberg's new genus, rafnia. But were we to admit the propriety of this disposition, so much would still remain to be done, that we have been induced to leave the genus as we found it. In the course of our labours we often painfully feel the truth of La Marek's observation, that those who write general botany in an alphabetical order, cannot have entire natural families before them at once, and that, therefore, they can seldom do more than fuggel their doubts, without being able positively to determine what station should be assigned to a plant which seems to be improperly placed. A complete reformation of the genera in all the great universally acknowledged natural families, adapted to the multitude of species, which, within a few years, have poured in upon us from every quarter of the world, is indeed a task to which the unremitted attention of a whole life would scarcely be equal.

**Propagation and Culture.**—Most of these plants are cultivated by seeds, grown in a hot-bed in the spring, and afterwards treated in the usual manner. Thofe which are natives of the Cape will be sufficiently protected by the conservatory or dry house; but such as come from the East Indies and West Indies, and the hotter parts of Africa, must be kept in the bark flove. *C. laburnifolia* (n. 37.) is easily propagated by cuttings.

**Crotalaria**, in Gardening, comprehends plants of the herbaceous and shrubby exotic kinds, of which the species cultivated are, the channel-flaked crotalaria (*C. juncea*), and the laburnum leaved crotalaria (*C. laburnifolia*).

**Method of Culture.**—The first kind of these plants may be increased by sowing the seeds in pots of light mellow tree mould in the spring, plunging them in the hot bed of the flove; and when the plants are of sufficient growth, removing them into separate pots.

The second kind may be raised either by seeds in the above manner, or by planting cuttings of the young branches in the later spring months, in pots of the same sort of earth, and plunging them in the bark beds of the flove, giving them water frequently, and removing them when well rooted into separate pots, of proper sizes.

These plants are capable of being exposed to the open air during a little of the heat of the summer season, but at other times liable to the protection of the hot-house or flower.

**Crotalo**, an instrument of military music. (See *Crotalum*.) The Turks are the first, among the moderns, who introduced the use of it for their troops. It is now common in Flanders and Florence, and other territories on the continent. It has only one tone; but its effect in marking time may be distinctly heard through the noise of forty drums. This is the same instrument with the ancient cymbalum.

**Crotalophorus Angus**, in Zoology, the name used by the generality of authors for the rattle snake. See *Crotalus*.

**Crotalophorus anguis**, is also the name of a very remarkable species of serpent, more usually known by the name of *crotalus dielato*.

**Crotalum**, an ancient kind of cymbalum, or military instrument, found on medals, in the hands of the priests of Cybele.

The crotalum differed from the *jubula* in the form of the instrument. It consisted of two little flat plates, or rods, which were shaken in the hand, and in striking against each other made a noise.

It was sometimes also made of a reed split lengthwise half-way down; one part whereof they struck against the other; and as this made a noise something like that of a brand's bill, they called that bird crotalum, or a platter on the crotalum; and Aristophanes calls a great rattle a crotalum.

Clemens Alexandrius attributes the invention to the Sicilians; and forbids the use thereof to the Carthagians, because of the indecent motions and gestures that accompany it.

"Cymbala crotalis pruentiaco armis Priapo Ponti et adductae tympana pulsa manu."
CROTALUS, in Zoology, a genus of serpents, having plates on the belly, both plates and scales under the tail, and the tail itself terminated by a rattle.

These are the rattlesnakes of the English, and serpents à fonnettes of the French, or, as some writers among the latter call them, crotalophores. The whole genus is furnished with poison by means of fangs.

Their head is large, somewhat triangular, rather flat on the upper part, and, like the body, covered with carinated scales, but which in general are of a larger size; the eyes are very brilliant, and protected by a transparent membrane; the mouth large, and capable of great deflection; the tongue long, fuscated at the extremity, and susceptible of a brisk vibratory motion. The venomous fangs are placed in two longitudinal rows, in the upper part or roof of the mouth: the largest of these fangs stand foremost, from whence they progressively become smaller as they recede further back in the mouth, and are usually fourteen in number altogether, seven being disposed in each series. Each of these have two small filatures, one at the base, the other a little above the tip, through which the venom is discharged into the wound, by pressing on the poison bags at the base of the fangs. This poison is of a greenish colour, and the larger fangs in rattle-snakes of considerable size about half an inch long.

The rattle is a peculiar instrument ordained by nature to announce the approach of this formidable serpent to other animals, and warn them of their danger. Till the discovery of America, such extraordinary powers in the reptile race were unknown to the inhabitants of our hemisphere; and from that period to the present they have attracted the particular attention of naturalists.

The rattle is a moveable apparatus of a horny texture, and consisting of a greater or smaller number of joints, which, as the creature moves, bends forth a peculiar jarring sound, not very unlike that of a child's rattle. The number of its joints vary not only in different species, but in individuals of the same species; and seem, if any dependence can be placed on the occurrence of travellers, to be governed in a great measure by the age and health of the animal. Some believe the age of these snakes may be constantly ascertained by the number of those joints, one being added annually; and hence they are supposed to attain to a great age, as rattle-snakes have been found with no less than forty or even fifty joints in this part. Some of the Indians deny this, and assert that the amount of those joints in the rattle determines the number of human beings that have fallen victims to the deadly fangs of those hideous creatures. A particular account of the structure of the poisonous fangs of the rattle-snake is given in the Philosophical Transactions by Dr. Grey; and a copious description of the rattles of different species has lately appeared by La Cepede.

The noise of the rattle-snake is said to be rather feeble in general, and of course not very distinctly heard till the creature approaches pretty near. This we suspect from what we have observed of the rattle-snakes brought over to Europe. Tho' these, indeed, having endured the want of proper sublimation for months, and being in a state of captivity, cannot be supposed to afford any absolute criterion; but from these we may premise that the noise is not so loud as some travellers represent. Once we had an opportunity of hearing the noise of two rattle-snakes of the striped or duriferous species, confined in the same cage: it was an incessant rattling hum, distinct enough in any part of the room, which was moderately large, but not so strong or piercing as to be heard at a much greater distance.

Almost every animal becomes panic stricken at the sight of the rattle-snake, and seems at once deprived of the power of motion, or the exercise of its usual instinct of self-preservation. Horses and dogs are momentarily arrested in their progress, and wait, without attempting to move, the nearer approach of the terrible creature, unless driven by man with force from the immediate danger. From what cause this terror in animals may arise, when the rattle advances and threatens destruction, is difficult to say, except it be the effect of terror. The fascinating power attributed to serpents does not admit of much credit: we should suspect rather that they become stupefied with horror at their danger, and are unable through fear to attempt escaping till the snake inflicts its wound, when escape is too late. The snake remains quiet till his victim expires, and then proceeds in security to devour it. That this does not depend on the power of fascination, as it is expressed, in snakes may be in some measure inferred, from considering that the most stupid of all animals are more likely to get out of their power than those whose instinctive penetration, on other occasions, might most readily enable them to avoid difficulties. Thus we see that horses and dogs fall a prey to the rattle-snake, through their acute sense of danger; while the hog, stupid and indifferent, and scarcely possessing the instinct to turn a few paces aside to avoid almost certain destruction, approaches the rattle-snake with impunity, or secks him in his covert, attacks him, tramples on him, and devours him.

Man or animals bitten by the rattle-snake expire in extreme agony: the tongue swells to an enormous size; the blood turns black; and all the extremities becoming cold, gangrene ensues, and is speedily succeeded by death.

The remedies in common use are the polygala feneca, or aritlochia fermentaria, employed as a decoction, and applied in fomentation as hot as can be possibly borne; or sometimes fearification, or cauterising the wound with a burning iron, if immediate in their application, is attended with success; and in either case, if the situation of the wound will allow, it is necessary to retard the circulation of the venom through the system, by means of ligatures. The rattlesnakes have an offensive smell, notwithstanding which the negroes eat the flesh like that of other serpents; and they have a superstitious idea, that the rattles, as a charm, are of sovereign efficacy to women in child-birth.

The different kinds of rattle-snakes seem to have been confounded with each other till late years. Gemelin makes five distinct species, in which he is followed by the writers of this country. To these, however, Latreille adds three more, which he describes from specimens in the National Museum at Paris. These are his crotala a lophangis, crotala a quercus, and crotala candoi: the two first of these are natives of America, the other is from the East Indies. It is believed that two of the above number have been previously noticed by Seba, but whose description, if it be really so, is much less explicit than the account rendered from the specimens in the French Museum by Latreille.

Species:

**HORRIDUS.** Fuscous, with blackish transverse bands. Plates of the belly 16; of the tail 2.

This species is found from three to four or five feet in length. Some lay even six feet, and the thickest of a man's arm. We once saw the skin of a rattle-snake, which, when perfect, measured, as it was affirmed, eleven feet six inches, and in the girth appeared to be about the thickness of a man's thigh; it was, therefore, in dimensions, equal to some of the largest boas. The general colour of the rattle-snake is yellowish-brown, marked throughout its length with a number of transverse, and somewhat irregular, bands
of deep brown; and from the head to some distance down the neck run two or three longitudinal stripes of the same colour. The under parts are of a dingy yellowish-brown colour, with dusky spots and freckles; the rattle at the end of the tail brownish.

The largest rattle-snake which Catesby ever saw (and he travelled over those parts of America in which they most abound) was about eight feet in length, and weighed between eight and nine pounds. "This monster," says he, "was living in the house of Colonel Blake of Carolina, and had certainly taken up his abode there undisturbed, had not the domestic animals alarmed the family with their repeated outcry. The dogs and poultry united in their hatred to him, throwing the greatest confusion, by erecting their bristles and feathers, and expressing their wrath and indignation, surrounded him, but carefully kept his distance; while he, regardless of their threats, glided slowly along." "It is not uncommon," adds Mr. Catesby, "to have come into houses: a very extraordinary instance of which happened to myself in the same gentleman's house, in the month of February, 1722. The servant, in making the bed in the ground-room (but few minutes after I left it), on turning down the sheets, discovered a rattle-snake coiled between the sheets in the middle of the bed." "They are the most inoffensive and slow moving snake," adds this author, "of all others, and are never the aggressors, except in what they prey upon; for unless they are disturbed, they will not bite; and when provoked, they give warning by shaking their rattles. These are commonly believed to be the most deadly ferpent of any in these parts of America. I believe they are so, as being generally the largest, and making a deeper wound, and injecting a greater quantity of poison. The most successful remedy the Indians seem to have is to suck the wound, which, in a flight bite, has sometimes a good effect. They have likewise some roots, which they pretend v. e. a. effect a cure, particularly a kind of auranum, commonly called heart-snake-root; a kind of chrysantheme, called St. Anthony's crofs; and some others: but that which they rely on the most, and which most of the Virginian and Carolinian Indians carry dry in their pockets, is a small tuberous root, which they procure from the remote parts of the country. This they chew, and swallow the juice, applying some to the wound." Mr. Catesby having, by travelling much among the Indians, had frequent opportunities of seeing the direful effects of the bite inflicted by these snakes, seems to consider that the good results attributed in common to these remedies is owing more to the force of nature, or the lightness of the bite, than to any other cause. He has known persons bitten to survive, without any ailment, for many hours: but where a rattle-snake with full force penetrates with his deadly fangs into a vein or artery, inevitable death ensues, and that, as he has often seen, in less than two minutes. The Indians, for this reason, know their delirium directly they are bit; and when they perceive it is mortal, apply no remedy, concluding all efforts in vain: if, however, it happens in a fleety part, they cut it out to stop the current of the poison.

The charming, as it is commonly called, or attractive power this snake is said to have of drawing to it small animals, and devouring them, Mr. Catesby says, is generally believed in America. He allows that he never witnessed the fact; but that a great number of persons, by whom the circumstance had been related, agreed exactly in the manner in which the effect is produced. "Little birds, and quadrupeds of a small size, particularly squirrels, (on which these snakes chiefly prey,) no sooner perceive their mortal enemy than they skip from fpray to fpray, hovering and approaching gradually nearer to him, regardless of any other danger, and with distracted gestures and outcaste thrown, from the top of the loftiest trees, to the mouth of the snake, who opens his jaws, takes them in, and in an instant swallows them. In a memoir on the suppos'd fascinating power of the rattle-snake, by Dr. Barton, professor of natural history in the university of Pennsylvania, it is however contended to be nothing more than the fluttering of old birds in defence of their young, when they perceive the snake lying in wait for prey, and which are themselves caught, as well as their young, by the rattle-snake, unless they save themselves by a timely retreat.

Rattle-snakes are said to swarm in the less inhabited parts of America, but are now almost extirpated in the neighbourhood of populous places. None are found further north than the mountains near Lake Champlain, but they infest South America even as far as Brazil. They love wooded and lofty hills, especially where the flrata are rocky or chancy. The paths near Niagara abound with them. Being slow of motion, they frequent the sides of hills to feize on frogs, or fuch animals as rest there to quench their thirst. During summer they are generally found in pairs; in winter, assembled together in multitudes, and lurking under ground, where they remain till the return of fine weather, when they creep out of their hiding-places in a weak and languid state. A person has seen a piece of ground covered with them, and killed with a long rod between fifty and seventy, till overpowered with the stench, which is dreadfully offensive, he was obliged to retire.

The rattle-snake is a viviparous animal; producing its young in the month of June, generally about twelve in number, and which by September acquire the length of twelve inches. It is said to protect its young in the same manner as the common viper, namely, by receiving them into its mouth, and swallowing them. This is asserted by M. de Beuvois, who saw a large rattle-snake, which he happened to disturb in his walks, coil itself up, open its jaws, and instantly receive five small ones, which were lying by it, and indifferently rushed into its mouth. M. de Beuvois retired, and watched the snake, and in about a quarter of an hour after saw her again discharge them. He then approached a second time, when the young retired into its mouth with greater celerity than before; and the snake immediately moved off among the grass, and escaped. This happened at a place called Pine-Log, where the writer spent some time with the Indians, during an illness with which he was seized. This circumstance is related in the American Philosophical Transactions.

From experiments made in Carolina by captain Hall, and related in the Philosophical Transactions, it appears that a rattle-snake of about four feet long, being fastened to a stake fixed in the ground, bit three dogs: the first of which died in less than a quarter of a minute; the second, which was bitten a short time afterwards, in about two hours, in convulsions: and the third, which was bitten about half an hour afterwards, showed the visible effects of the poison in about three hours, and died likewise. Four days after this, another dog was bitten, which died in about half a minute; and then another, which died in four minutes. A cat, which was bitten, was found dead the next day. Eight days after this, a frog was bitten, which died in two minutes; and a chicken of three months old in three minutes. The experiments having been discontinued some time, from want of subjects, a common black snake was procured, which was healthy and vigorous, and about three feet long. It was brought to the rattle-snake, when they bit each other: the black snake biting the rattle-snake fo as to make it bleed. 3 N 2. They
This is a native of Surinam, is very large, and armed with fangs of vast size. It can scarcely be considered with propriety as belonging to this genus.

**Le Crotalus a Queule Noire.** Tail black. Abdominal plates 146, subcaudal scales 56.

Described by Latreille, who observes that it measures from three to four feet in length. The back is reddish-grey, speckled with brown, and marked with brown irregular angular bands; and a streak of fawn colour down the back. The species is a native of Carolina.

**Le Crotalus a Losange.** Yellowish-grey, with two zig-zag lines of reddish brown along the back, forming by their angles a series of lozenge spots. Latreille.

A native of America. Described as a new species, from a specimen in the Paris Museum.

**Le Crotalus Canard.** Head obtuse; body greyish, with numerous black spots and lines upon the back and sides. Latreille.

A specimen of this species, between two and three feet in length, is preserved in the Natural History Museum at Paris.

**Crotalus,** in Ancient Geography, a river of Italy, in the Lucride territory, now called Corace. M. d'Anville places it in Bruttium.

**Crotalystrie.** or Crotalistris, in Antiquity, a kind of morice dancers, admitted to entertainments, in order to divert the company with their dancing, and playing on an instrument called crotalum, whence they had their name. By an ancient poet, entitled "Cops," and described by some to Virgil, it appears that those who played with the crotals danced at the same time. In these dances, performed chiefly by women, they practised a variety of wanton gesticulations and indecent attitudes and pollutions, so that these, as well as cymbals, were banished from the festivals of all Christians.

**Crotaphites Musculus,** in Anatomy, a name sometimes applied to the temporal muscle. See Mastication.

**Crotaphium,** in Medical Writers, is used for a pain in the head. See Head-ache.

**Crotch,** in Rural Economy, a term which is often provincially applied to signify a foot of hook.

**Crotchets,** Crocias, in Sea Language, a name given to those crooked timbers that are placed under the keel, in the fore and hind-parts of a ship, upon which the frame of her hull grows narrower below, as it approaches the stem afore, and the stern-post abaft.

**Crotchets** are also certain pieces of wood or iron, whose upper parts open in two horns, or arms, like a half-moon. They are fixed in the different parts of a hith, according to the use for which they may be designed, which is usually to support the spars, masts, yards, &c.

**Crotchett,** in Midwifery, an instrument used in extracting or drawing a foetus through the vagina, when the pelvis in the woman is so distorted, or straightened, as to make it impossible for it to pass in its entire and perfect state. In these cases, the head of the foetus is always previously opened, and the brain evacuated, to allow the bones of the cranium to collapse.

The crotchett appears to have been used for this purpose, from a very early period, as we find it described under the name of mucus, or a hook, by Hippocrates, and afterwards by Celsum, and by Aelianus. Originally it consisted of a straight piece of iron, one end of which was turned down, forming a hook. The part turned down was made sharp, and fashioned like the head of a spear; which form it still retains. See Plate of Midwifery. In later times a wooden
a wooden handle has been added, as more convenient for the operator. About the middle of the last century, Mons. Levratt recommended curving the stem of the crotchet, which added much to the power, and to the utility of the instrument. He also advised using two blades, one to be applied on each side of the head of the child; but this is neither necessary, nor often practicable, as in cases requiring the use of the crotchet, the pelvis of the woman is too narrow to admit the introduction of a second blade. The casks in which the crotchet is employed, and the manner of using them, are described under the article LABORIOUS or DIFFICULT BIRTHS.

Crotchets, in Music, one of the notes, or characters of time, marked thus \( \frac{1}{2} \) equal to half a minim, and double \( \frac{1}{2} \)

A dot added to the crotchet, thus \( \frac{1}{2} \), increases its time by half; that is, makes it equal to a crotchet and a half, or to three quavers.

Crotchets, in Painting, denotes a sort of line, sometimes straight, sometimes waved, but always turned up at each extreme: serving to bind or link together several articles, that are to be read together, before you proceed to the subdivisions, placed aside of them with similar or smaller crotchets; much used in genealogies, analytical tables, &c. for facilitating the division and subdivision of any subject. Crotchets are also used for two opposite characters, serving to inclose what we call a _parenthetical_, or any other part of a discourse to be distinguished from the rest of the work; sometimes in this form [ ], and sometimes in this ( ).

CROTENAY, in Geography, a town of France, in the department of the Jura, and district of Poligny; 2 leagues S.E. of Poligny.

CROTENDORF, a small town of Saxony, in the circle of the Egyeiberg, with about 1000 inhabitants, famous for its quarries of beautiful white marble, which have furnished the marble for the interior ornaments of the king's catholic chapel at Dresden, for the statues of the king, and for the monument erected to the celebrated Gellert in Wendler's garden at Leipzig. The marble ornaments of the famous town hall of Amsterdam, have also been furnished by the Crotendorf quarries, and it is but about twenty years ago that they have yielded Arnold's large blocks for the monument erected at Zell in Hanover, to the late unfortunate queen Matilda of Denmark, sister to Geo. III. of England. The Crotendorf marble quarries were discovered between 1758 and 1793, by Joseph Maria Naßeni. They are nearly 20 English miles in extent.


Gen. Ch. Monocoeous, rarely dioecious, or polygamous. Male flowers. _Cal. Perianth, either one-leafed, five-toothed, or five-cleft; or with five or more leaves. Cor. Petals five, feebly larger than the calyx; or none. N/穴 five small glands, inserted into the receptacle. Male flowers. Stami. Filaments from about five to fifteen, or more, the length of the flower, most commonly connected at the base; anthers roundish, didymous. Female flowers. _Cal. Perianth of five leaves or more. Cor. Petals five, or more frequently none. Pet. _Germ superior, roundish; styles three or more, generally bident; stigma flat or cleft. Peric. Capsule roundish, three-lobed at the sides, three-celled; cells two-valved. _eds one in each cell.

Eff. Ch. Male and female flowers separate. Male. Calyx with at least five leaves or five divisions. Stamens from five to fifteen, or more. Female. Calyx of five leaves or more. Styles three or more. Capsule three-celled. Seeds solitary.

* Stem woody.

Sp. 1. C. variegatum. Linn. Sp. Pl. 3. Mart. 1. Lam. 1. Wildl. 1. (Cadinum cryophyllonium; Ramph. Amb. 46. tab. 25.) Tijere-maram; Rheu. Mal. 6. 100. tab. 61. Sp. (Lamph. tab. 26. fig. 27.) leaves lanceolate, quite entire, smooth, variegated, petioloed. One flower, five or six feet high, with the habit of geranium. Branches cylindrical, smooth, leafy towards the summit, tubercled towards the base. _Leaves alternate, beautifully variegated with green and golden yellow, generally retuse. Flowers at the summit of the branches in flender racemes, peduncled, smooth, as long or longer than the leaves; bracts one to each flower, oval; calyx of the female about half the length of the stem. A native of the Moluccas and Japan, and of Malacolco and Tanna in the South Seas. It is cultivated for the beauty of its foliage in many parts of the East Indies, and is employed as an ornament both in times of repose, and at the funerals of unmarried persons. 2. C. capilla. Linn. Sp. Pl. 4. Lam. 2. Wildl. 2. (C. linearis; Mart. 2. Ricinoides vilagini folio; Plum. Sp. 27. Born. amer. tab. 248. fig. 1. Catef. Car. 2. 46. tab. 46. L. & Tourn. 656.) leaves lanceolate, quite entire, petioloed, flat and scaly above, shining and whitish underneath. Lam. A shrub from three to six or seven feet high. Stems short, thick; branches numerous, cylindrical, cally broken, leafy, covered with a smooth, greyish white bark. _Leaves alternate, resembling those of the almond, not channeled, as in the next species; having their upper surface fringed with orbicular white scales, marked with a spot in the middle, as in hippocastanum. Flowers small, in terminal spikes; males uppermost, with a five-leafed calyx and five white petals; females lower, with a very small five-cleft calyx, and without petals. The leaves, the young shoots, and especially the bark, have a pungent aromatic odor when bruised or burnt. Lam. A native of Carolina and South America. The bark of this plant has been generally supposed to be the cascarilla of the Indians. See CASCARILLA. Dr. Woodville, in the earlies part of his medical botany, expressed his doubts on the subject; and in his appendix to that work, declared himself fully convinced that the cascarilla is obtained solely from the _Cassia cinnamomea_ of Lam., which Swartz and Willdenow have removed to the present genus. See _Cassia cinnamomea_. 3. C. lineata. Lam. 3. Hort. Kew. p. 374. Jacq. Am. tab. 26. 167. fig. 4. (C. cinnamomata; Woolv. Med. Bot. 41. C. cascarilla 4. Wildl. Ricinoides; Sm. Dur. folio; Sm. Ann. int. 133. tab. 80. fig. 1.) leaves linear, on very short petioles, with two glands at the base, channelled and green above, tomentose-white underneath. La Mark was satisfied by well-prepared specimens in the herbarium of Jussieu, that this plant is specifically distinct from the preceding.
ceeding, though they have been confounded by Linnaeus. The author of Hortus Kewensis appears to have been of the same opinion by his excluding the synonyms of Catesby and Plumier, quoted under C. cacaica. A shrub, four or five feet high, erect, much branched; branches cylindrical, yellowish, somewhat tomentous. **Leaves** about an inch and half long, a line and half or two lines broad, exactly linear, retuse; cloathed underneath with a dull white or yellowish down, which, when viewed through a lens, is found to consist of fellated hairs, a character which belongs to most of the hairy species of this genus; glands opposite, cylindrical, truncated, horizontal. **Flowers** in spikes. The whole plant has a pleasant smell. A native of the West Indies. In Jamaica it is called wild rosemary. The plant cultivated by Miller under the name of C. cacaica, appears to have been the present species. 4. **C. coccinifolius.** Mart. 39. (C. punctatum; Lour. Cochinch. 531.) "Leaves alternate, lanceolate, quite entire, hoary underneath, shining, dotted; capiases scurfy. A middle sized tree with spreading branches. **Leaves** smooth, fimbriate. **Flowers** white; in simple oblong, terminal racemes; males on the upper part; calyx bell-shaped, with five divisions; petals five, lanceolate-egg-shaped, spreading; filaments fourteen, longer than the corolla; females below; calyx and petals as in the male; germ trigonous; styles three, short; stigmas quadrifid, filiform, in- flexed. A native of woods in Cochinchina. 5. **C. compressum.** Lam. 20. Willd. 62. "Leaves alternate, entire, tomentous underneath; petioles somewhat diluent; little branches compreged." **Branches** hard, somewhat woody, angular, a little pubescent or morely towards the top. **Leaves** resembling those of _Lanistimum auritum_, petiolated, almost smooth, and sprinkled with feebly perceptible dots above, tomentous and greyish white underneath. **Flowers** in spikes at the extremity and forks of the branches. Found by Commeron in Brazil. G. **C. dioicum.** Mart. 42. Willd. 7. Cav. ic. 1. 4. tab. 6. "Leaves scattered, lanceolate, narrowed at the base, obtuse, quite entire, tomentous, nearly sessile; flowers dioecious." Whole plant covered with a soft nap. Stem cylindrical, with diverging branches. **Leaves** vilvver underneath, somewhat channelled, spreading. Male flowers in terminal spikes, pedicellate, with awl-shaped bractes; calyx bell-shaped, half-five-cleft; corolla none; necelfiarious glands five, yellow, placed in a ring at the bot- tom of the calyx; filaments twelve or thirteen, not united at the bottom, a little longer than the calyx and attached to it in its lower part, villous, green. Female flowers like the male in the calyx and glands, but a different plant, and on three flowered terminal pedicels; germ roundish, five styles three, united at the base, half-five-cleft. **Capule** larger than a pea. Seeds egg-shaped, smooth. A native of Mexico, cultivated at Madrid. 7. **C. polygamum.** Mart. 51. Jacq. Amer. pict. tab. 253, fig. 59. "Leaves alternate, lanceolate, serrated, thinly felt with decumbent hairs." An upright shrub, four feet high, but little subdivided. **Branches** cylindrical, smooth, cincereous. **Leaves** almost three inches long, on very short petioles, acute, smooth, green on both sides. Flowers usually appearing before the leaves, white, fimbriate, some herma- phrodite, others male and others female on the same, or on different plants; hermaphrodites, calyx five-leafed; petals oblong, longer than the calyx; germ three-grooved; style fimbriate with six segments. A native of Carthagea, in New Spain. 11. **C. dichotomum.** Willd. 19. "Leaves lanceolate, serrated, hairy, tomentous underneath; spikes from the forks of the branches; branches dichotomous, di- varicated." **Branches** thick, woody, greyish brown. **Leaves** half an inch long, on short petioles. **Spikes** half an inch long. A native of St. Domingo. 9. **C. ficofera.** Willd. 3. "Leaves elliptical, quite entire, obtuse, mucronate, petiolated, densely tomentous underneath; flowers dioecious." Nearly allied to **C. cacaica;** a. 2. A native of the Island of St. Croix in the West Indies. 10. **C. maritimum.** Willd. 4. Wilt. Car. 239. (C. coccinifolium; Mich. amer. bor. 2. 214.) "Leaves elliptical, quite entire, rather obtuse, hoary, tomentous underneath, spikes terminal, few-flowered. **Leaves** half an inch long, wrinkled on the upper surface; petioles long, tomentous. Female flower solitary at the base of the spike. 11. **C. lanceum.** Lam. 39. Willd. 62. "Leaves elliptical, quite entire, woolly on both sides; racemes terminal and from the forks of the branches; flamen bearded." Whole plant covered with a short, woolly, brownish down, giving it a fombe appearance. A low shrub, with loosely spreading branches. **Leaves** alternate, often opposite at the tops and under the forks of the branches, small, on short petioles. **Flowers** yellowish; males with at least ten flamen; females with three short, villous styles. A native of South America, near Monte Video. 12. **C. levisimum.** Lam. 46. Willd. 39. "Leaves elliptical, smooth and even on both sides, with one gland at the base, quite entire, or serrated, obtuse; racemes terminal, elongated." **Branches** cylindrical, proliferous, pul- verulent-filous and cincereous near the top. **Leaves** petiolated, clustered at the ends of the branches, two inches long or more, paler underneath. **Capule** either quite entire, or slightly and obtusely serrated near the top; **capules** awl-shaped, deciduous. Common peduncle about seven inches long, erect, filariated-angular, covered with farinaceous scales, muricated after the fall of the flowers; calyx somewhat fur- tute; flamen numerous. A native of Hainan. 13. **C. reiculatum.** Willd. 41. "Leaves oblong, acuminate, quite entire, smooth on both sides, reticulated underneath; rac- eeme terminal, elongated." **Branches** cylindrical, dark brown; younger ones pubescens. **Leaves** three or four inches long; **petioles** pubescent. **Raceme** half a foot long. 14. **C. laurinum.** Mart. 35. Willd. 37. "Leaves oblong, acute, quite entire, somewhat thick and rigid, smooth, dot- ted underneath; petals fesbrous, dotted; raceme axillary, very long, spreading; **stem** arborescent." A native of Ja- maica. 15. **C. ovalifolium.** Willd. 8. Wilt. St. Crux. 253. "Leaves oblong, obtuse, attenuated at the base, finely serrated at the tip, petiolated, smooth; little branches hairy." **Leaves** an inch long, green on both sides, thinly felt with fellated hairs; petals long. **Flowers** in a terminal spike; females three or four at the base, one long peduncle; **capule** half an inch long, half-five-cleft, with a tough edge. **Capule** larger than a pea. **Seeds** egg-shaped, smooth. A native of North America, cultivated at Washington.
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Burm. Amer. tab. 240. fig. 2. Tourn. 670.) “Leaves ovate-lanceolate, entire, covered with a hissing meal; spikes axillary; capself round, rather large, slightly hairy.” A tree about the size of an apple-tree, with a dark red bark. *Leaves* very numerous, alternate, petioled, in size and nearly in shape resembling those of the citrus, but less firm. *Flowers* in spikes near a foot long; males at the top; calyx with five divisions: petals five, white, ovate; filaments numerous; females below; calyx with five divisions, powdery. *Calfle* round, a little less than a hazel nut, covered with a hissing meal. *Seeds* oblong, convex on one side, angular on the other. Offered by Pluemer in the island of St. Domingo. 20. *C. bayjumifrum.* Lam. Mart. 125. Mart. 15. Lam. 4. Wildl. 502. Jacq. prodr. 255. tab. 162. fig. 6. pict. 12. tab. 212. Hort. 4. tab. 45. "Leaves ovate-lanceolate, quite entire, with two glands at the base, fimbrious, tomentous underneath; capself tomentous.”

A shrub, three or four feet high, sweet-scented, erect, branch-ed, diffuse, covered all over with a close yellowish down. *Leaves* featteringly alternate, from two to three inches long, acute, or rather long petioles. *Flowers* small, in spikes both terminal and proceeding from the divisions of the upper branches; males uppermost, with a five-parted calyx and five white petals. It much resembles *C. humile,* (n. 59.) but its leaves are not heart-shaped. A native of the West Indies. The whole plant abounds with a thickish, yellowish, sweet-scented balsamic juice, which drops from it when it is cut or broken. In Martinico this juice is distilled with spirits of wine, and a cordial liquor obtained, which is introduced at the table and called Eau de Mante. 21. *C. eriothleum.* (C. lanatum; Mart. 40. Lour. Cochinch. 581.) "Leaves opposite, ovate-lanceolate, quite entire, smooth; corollas white; in simple terminal racemes; male at the top; calyx tubular, five-parted, erect; petals five, egg-shaped, woolly within, the length of the calyx; filaments fifteen, the length of the corolla; females below; calyx permanent, five-leaved; the leaves spreading, egg-shaped, acute; corolla none; germ egg-shaped; style none; filaments three, stellate, short, bifid, reflexed. *Calfle* egg-shaped, tubercled at the top. A native of woods in Cochinchina. La Marck having called another plant lanatum, (see n. 11.) we have been under the necessity of giving a new name to the present. 22. *C. farinisium.* Lam. 28. Wildl. 61. "Leaves opposite, ovate-lanceolate, nearly entire, green above, covered with a hoary mealy underneath; spikes slender.” A beautiful shrub, remarkable for the flong contral of colour in the upper and under sides of the leaves. *Branches* cylindrical, slender, smooth, greyish, long, several times dichot-omous. *Leaves* two inches long, in shape resembling those of common figs, on short petioles. Spikes two or three inches long, some terminal, others in the forks of the upper branches; female flowers at the base of the spike, white, slightly, with five acute divisions; germ roundish; styles three, quadrifid, widely expanding. Founded by Com-men-er in the island of Madagascar. 23. *C. umbellatum.* Wildl. 42. "Leaves ovate-oblong, acute, quite entire, smooth on both sides; flowers in terminal umbels.” Whole plant quite smooth. *Branches* cylindrical, cinereous-brown. *Leaves* three or four inches long, simply veined. *Umefle* simple, about five-ferated, on a capillary peduncle. A native of the East Indies. 24. *C. frericum.* Lam. 25. Wildl. 48. (C. matourense; Aubl. guam. 879. tab. 338.) "Leaves ovate-oblong, acuminato, silky-hoary underneath with two glands at the base; female calyxes chilated.” A tree. *Trunk* from eight to ten feet high, about nine inches in diameter, with an even cinereous bark; branches tender. *Leaves* alternate, entire, on rather long petioles. *Flowers* in a long, loose, villous, cinereous spike; calyx of the males with five deep, acute divisions; petals five, lanceolate, cinereous; filaments eleven, villous at the base; calyx of the females with five oval, fringed leaves; styles from twelve to fifteen, curved inwards; bracteae two, small, leaf-like at the base of each pedicel. A native of Cayenne and Guiana. 25. *C. fabulatum.* Lam. 27. Wildl. 25. (C. guianense; Aubl. guian. 882. tab. 339.) “Leaves oblong-obovate, acuminate, fringed, with two glands at the base, ferruginous-tenement underneath; capself smooth.” A smaller tree than the preceding, with a trunk not more than six inches in circum-ference. *Leaves* on long petioles. *Flowers* white, in axillary spikes near the ends of the branches, a native of Guiana. 26. *C. montanus.* Wildl. 46. "Leaves ovate-oblong, acuminate, quite entire, with two glands at the base, tomentous and redinous dotted underneath.”

*Branches* cylindrical, pubescent. *Leaves* four or five inches long, petioled, a little narrowed at the base, somewhat feaceous on the upper surface, hoary and sprinkled with very minute scarlet, redinous dots underneath. *Racemes* axillary and terminal, two inches long. The hairs in this species are not fllate. Found by Klein on mount Ka-lifgar, near Velor in the East Indies. 27. *C. ecocinum.* Mart. 45. Wildl. 38. Vahl. symb. 2. 97. "Leaves somewhat egg-shaped, acuminate, quite entire, smooth on both sides, with two dark brown glands at the base, dotted with scarlet underneath; racemes terminal.”

*Branches* cylindrical, puberulent-villos near the summit. *Leaves* two or three inches long, petioled, attenuated in the upper part, rather acute at the base, three-nerved, reticulately veined underneath and a little coloured by numerous, very stiff, scattered, ferruginous hairs; lower leaflets acute and half long, cylindrical. *Flowers* nearly fllate; racemes two inches long, either terminal and solitary, or crowded in the upper axils; peduncle yellow-ferruginous, angular; styles reflexed; germ white, dotted with scarlet. *Calfle* oblong, scarlet. Vahl. 28. *C. isophyllum.* Mart. 27. Wildl. 14. Forit. prod. 355. "Leaves infevely egg-shaped, quite entire; stem arboreous.” A native of New Caledonia. 29. *C. abufolium.* Lam. 9. Wildl. 13. "Leaves infevely egg-shaped, petioled, nearly entire, dotted with fllate hairs; racemes elongated, nearly terminal.”

*Branches* dotted, tomentous towards the summit. *Leaves* alternate, more hairy underneath; young ones tomentous, whitish. *Flowers* in fllate, loofe racemes; peduncles and calyxes somewhat tomentous; filaments of the males ten, villous or bearded. *Calfle* almost fllate, roundish-oval, covered with small fllate hairs, which fall off here and there, and leave these parts smooth. When the capsules fall off, the receptacles of the seeds remain on the common peduncle with three teeth at their summit, which have the appearance of permanent pedicels. Specimens brought by Dombev from Peru. 30. *C. betulinum.* Mart. 47. Wildl. 18. Vahl. symb. 2. 98. "Leaves egg-shaped, obtuse, unequally toothed, feaceous-dotted above, puberulent underneath; racemes axillary, longer than the leaf.” The habit of a bush. *Branches* cylindrical, purplish; younger ones hoary, covered with scales and fllate hairs. *Leaves* an inch long, with a minute pedicelled gland at each side of the base; petiole shorter than the leaf. *Flowers* small, a little remote, rough with hairs; calyx of the females with five linear, obtuse leaves. A native of the isles of St. Thomas and Domingo. 31. *C. glandulosa.* Lam. 5. Sp. Pl. 5. Mart. 5. Lam. 23. Wildl. 72. (C. fruticosus; folis fruticoso-ovatis, spiculis axillaribus; Brown. Jam. 345. Male folio arbor; Sloan. Jam. 39. Hilt. 2. 30. tab. 174.)
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Fig. 3. 4.) "Leaves egg-shaped, rather obtuse, quite entire, even-urfaced; fruit pendulous." Seldom less than seven or eight feet high. Leaves alternate, petiolated, glaucous underneath. Fruit smooth. According to Browne, all the parts of the plant are of an active warm nature, and have an agreeable smell. La Maree observes that Sloane's figures belong to trees from twenty to thirty feet high; and that in one of them the flowers are in simple terminal spikes, but in the other form lateral axillary panicles. A native of Jamaica. 32. C. globiferum. Mart. 32. Swartz. prod. 100. "Leaves egg-shaped, obtuse, entire; peduncles in pairs; flowers dioecious; fruit globular, cucumbiform." A native of Jamaica. 39. C. porrectum. Mart. 25. Willd. 45. Retz. Obf. 5. 50. "Leaves egg-shaped, acute, quite entire, torrentious underneath, dotted." Flowers in a spike. Caffes silky-hairy, femal. Sen. from Ceylon by Kay. Nov. 34. C. suffruticosum. Mart. 31. Swartz. prod. 100. "Leaves egg-shaped, acuminate, entire, smooth; flowers sessile, axillary, dioecious, with five fringes." A native of Hispaniola. 35. C. auriculatum. Lam. 6. (Riochus affinis odorifer, tenuior folio.) Small. Jam. Hift. t. 1:33. tab. 56. fig. 3.) "Leaves egg-shaped, acute, nearly entire, with two fetacous glands at the base, torrentious-hairy underneath." Refembling C. lineare (n. 3) in the texture and colour of the leaves, but differing in their form. Branches very slender, cylindrical, diffusus, divided, villous only at the summit. Leaves alternate, small, entire or very finely toothed, with a longitudinal furrow above, nervted underneath, on rather long peduncles. A native of St. Domingo. 36. C. philippense. Lam. 14. "Leaves egg-shaped, somewhat acuminate, nearly entire, with two glands at the base, tormentous and reticulated underneath; capsules covered with a scarlet wool." Branches cylindrical, slightly tormentous at the summit. Leaves alternate, petiolated, even and smooth above, nervted. "Flowers in terminal racemes not longer than the leaves. A native of the Philippine islands; found by Somersett. 27. C. luteiferum. Lin. Sp. Pl. 12. Mart. 14. Lam. 13. Gort. tab. 147. (Ailetris luteifera; Willd. Richmonis, circeo folio; Burm. Zeyl. 201. tab. 91. Pulv. abn. 55.) "Leaves egg-shaped, somewhat acuminate, toothed, on long petioles; calyxes tormentous." A middle-sized tree. Branches few, long, spreading, angular, rugosa. Leaves serrated. Flowers in simple terminal racemes, white, with five-leaved calyxes; male uppermost; corolla five-petalled; stamens from fifteen to twenty. Caffes small, globular, not grooved, enclosed at the base by the permanent spreading calyx. A native of Ceylon, Cochinchina, and Camarodd. A very fine laca exudes spontaneously from the tree, appearing like a small pearl or bud within the axils of its branches. It is used by the inhabitants of Ceylon to varnish their brasses, the handles of their knives, &c. 38. C. rufum. Lam. Sp. Pl. 16. Mart. 12. Lam. 21. Willd. 42. Gort. tab. 167. (Ficus millic. Baill. Pau. 492 n. 39. Lam. Pinus. 393 n. 12. Richmondis indica; Burm. Zeyl. 220. tab. 96. Gramm. molliscentum; Rumoh. Aen. 4. 68. tab. 42. Cadu-cimrum; Rick. Mili. 2. 61. tab. 32. Rich. H. 167, 1853, 1859. Supp. 11. 66.) "Leaves egg-shaped, acuminate, ferrated, fruticose, with two glands at the base; the lower than the leaves; racemes terminal." A middle-sized tree. Trunk rather slender; branches few, smooth, spreading, leafy on their upper part. Leaves alternate, unriveted; young ones clothed with reticulate hairs, which give them a dotted appearance. Flowers white, or inclining to yellow; male uppermost; calyx five-parted; petals five; glands about six; females below; calyx small, five-leaved, reticulate under the capsule. Caffes almost the size of a hazel-nut, smooth, three-furrowed. Such oval-rounded, a little fining, convex on one side, very obtutely-angulular on the other. A native of the East Indies, where it is cultivated for the sake of its medicinal, and particularly of its purgative qualities. Both its wood and its seeds are in use; but on account of their very violent acrid nature, they are little esteemed in Europe, and have not been admitted into the diffusories either of London or Edinburgh. 39. C. conglomer. Mart. 41. Loud. Coh. 578. "Leaves egg-shaped, glabrous, smooth, veined, flowers covered, naked, axillary." Somewhat shrubby, five feet high, with many reclining branches. Leaves alternate, unequil. Flowers both male and female without petals; glands eighteen. Caffes pendulous. A native of China, about Canton. 40. C. denudatum. (C. populifolium; Willd. 35. Mart. 38. Swartz. Prod. 191. Flor. Ind. Occ. 191.) Vahl. Symb. 2. 97.) "Leaves broad-eggl-shaped, acuminata, ferrated-teethed, with two glands at the base (one. Vahl.) petals the length of the leaves; racemes terminal, erect, foliaceous. Branches smooth, ferrated. Leaves near together towards the top of the branch, with the glands at the base on both sides. Calyx of the male flowers smooth, coloured; of the females, fructate, tooth-glanded leaves, and glandular teeth; germ rough with hairs. A native of Jamaica, and other parts of the West Indies. As both Miller and La Maree have a different populifolium (see n. 64, 65.) we have given a new trivial name to the plant before us. 41. C. acuminatum. Lam. 17. "Leaves egg-shaped, acuminate, some entire, others thinly and slightly toothed, without glands, tormentous underneath; spikes axillary and terminal, tormentous-ferruginosus." Branches somewhat tormentous, compressed towards the summit. Leaves large, obliquely nervted, reticulately veined; upper ones often opposite; petals, peduncles, and calyxes ferruginosous-tomentoal. Spikes generally fuscous; filaments thirty or more, not united at the base. Found by Commerson at Port Phalan in New Britain. It resembles C. japonicum (n. 65.) but differs in being ferrugious, or perhaps a tree, and in having leaves not entirely smooth. 42. C. rhombifolius. Willd. 70. "Leaves rhomboid-egg-shaped, acuminate, sometimes repand, smooth on both sides, sprinkled with pubescent dots; racemes panicled, pubescent." Leaves some repand, others quite entire; younger ones covered with a slight pubescence. A native of the island of Ceylon. Distinguish'd from the preceding by the shape and issuings of its leaves, and from C. japonicum, by having none of its leaves slightly three-lobed, as well as by its drubby fimbri. 43. C. pinnatum. Lam. 16. Willd. 19. "Leaves egg-shaped, somewhat rhomboidal, mucronate, or finely toothed, with two glands at the base, tormentous underneath; panicles ferruginosous-tomentaious." Leaves a little reticulating, those of black poplar, dark-green, and smooth above, which, inclining to ferruginous underneath. Flowers very numerous, small, fimbriata, in a rather long, branched panicle. Found by Commerson and Sommerat in the island of Zeyl. 44. C. foliiferum. Tallow-tree. Lin. Sp. Pl. 9. Mart. 92. Lam. 22. (Stollinia fabifera; Willd. Ricinus ebracteatus faber.; Pet. Gaz. 52. tab. 54. fig. 3. Evenmannia afera; Phil. Amath. 76. tab. 392. fig. 2.) "Leaves rhomboid-egg-shaped, acuminate, quite entire, smooth, with two very small glands at the base." A tree about the height of a pear tree, and in habit ressembling a cherry tree, with a height-grey, soft bark; branches long, flexible, smooth, leafy from the middle. Leaves scattered, numerous, becoming smaller, and forming tufts at the extremity of the branches, broader than long, resembling those of the back poplar.
poplar, but not toothed, green and smooth on both sides, deciduous, turning red before they fall; stipules two at the base of the young leaves, membranous, linear-lanceolate. Flowers in spikes two inches long, and resembling catkins; males numerous, very small, pedicelled; calyx very short, one-leaved, almost truncate, or very little divided; filaments from three to five, but little longer than the calyx; females few, at the base of the spikes. Capsules oval, pointed, with three convex sides, smooth, hard. Seeds almost hemispherical, convex on one side, flattened and narrowed on the other, covered with a delicate snow-white pubescence. These seeds are attached by their upper interior part to three thread-like receptacles, and remain after the shift of the capsule have fallen off; so that the spike then seems composed of small racemes with very white berries. A native of China, on the banks of rivers. The Chinese obtain a kind of tallow from the seeds after they have been well cleared of the white pubescence in which they are enclosed, which would otherwise considerably lessen the quantity of oil. For this purpose they are steeped ten or fifteen days in water, after which this covering may be completely rubbed off, though not without some difficulty. The oil drops from the peas like thick, glutinous lamp oil, and soon hardens to the consistence of common tallow. This tallow is also obtained by boiling the peas and skimming off the oil as it rises. Candles made of it are very white, but are sometimes coloured by adding to it a little vermilion; these candles, says George Staunton, are firmer than those of tallow, as well as free from all offensive odour; but they are not equal to those of wax or spermaceti. 45. C. nutans. Lam. 2d. Willd. 34. Vahl. Symb. 2. 96. Forti. Prod. 354. "Leaves rhomboidal, egg-shaped, acuminate, undulate, smooth; glands marginal." Similar to the preceding; but its leaves are less acuminate, and the glands are not on the pedicle at the infection of the leaf, but on the margin of the leaf itself, a little above its base. Spike two or three inches long. Flowers in two rows. A native of the Society and Friendly islands, and of the New Hebrides. 46. C. brautii. Lam. 18. Willd. 32. "Leaves opposite, especially the upper ones, acute, entire, with two glands at the base, tomentose underneath; racemes long, loose, bracteate. Branches cylindrical, several times dichotomous, cinnereous, tomentose, a little ferruginous near the summit. Leaves petiolate. Petioles, peduncles, calyces, and glands tomentose and villous. Racemes from four to six inches long, simple, proceeding from the forks of the upper branches; bracteas oblong-lanceolate, fuscous, caducous. Flowers pedicelled, from two to five together in lateral bundles; females large; ca. yx with five oval-oblong leaves; germ large, trigonous; style three, multiped, penicilliated. Found by Commerson in the island of Madagascar. 47. C. lucidum. Linn. Sp. Pl. 11. Mart. 13. Lam. 24. Willd. 34. Swartz. Fl. Ind. Occ. 2. 1103. (C. pellens; Linn. Mant. 4. 57. Mart. 36. Swartz. Prod. 100. C. ipicatum; Berg. Trans. Roy. Soc. 1788. p. 131. tab. 7. C. erectum, glabrum; Brown. Jam. 3. 147. n. 6.) "Leaves opposite, egg-shaped, acuminate, nearly entire, smooth on both sides; racemes crenate, terminal; calyces larger than the fruit. Calyx of the males ten-leaved, imbricated, hispinate on the inner side; corolla none; that of the females five-leaved; germ hispinate. A native of Jamaica. 48. C. orophyllum. Lam. 30. "Leaves opposite, egg-shaped, acuminate, quite entire; racemes compound; seeds involved in a reddish wool." Branches slender, cylindrical, smooth, leafy. Leaves green and smooth above, greenish underneath, with a fine down, ciliately on the edges. Flowers in axillary and terminal racemes. Capsules oval, dotted. Seeds several in each cell. Found by Commerson in Brazil, near Rio-jas. Vol. X.

CROTON.

La Marck's specimens were without flowers, and he very justly observes, that the polyper formenta are a real genus dubium. 49. C. caffioideus. Lam. 31. "Leaves opposite, egg-shaped, toothed, smooth on both sides; petioles fuscous, channelled; spikes few-flowered." A small shrub. Branches very slender, slightly ferrugineous-tomentous near the top. Leaves leathen at both ends. Flowers in short, ferrugineous, terminal spikes; calyx and germs with short, ferratted, hairs; style three, tri-fid or quadrifid. Found by Commerson in the island of Madagascar. 50. C. flavum. Linn. Sp. Pl. 13. Mart. 20. Lam. 32. Willd. 63. (C. fruticulatum & villum; Brown. Jam. 347. n. 3.) "Leaves heart-shaped, oblong, acuminate, quite entire, hoary above, tomentose underneath, with two pedicelled glands at the base; little branches densely tomentous. A shrub, two or three feet high. Petioles shorter than the leaves. Spikes from the forks of the branches. A native of Jamaica. 51. C. Richardi. Willd. 64. "Leaves very slightly heart-shaped, oblong-lanceolate, mucronate, quite entire, fuscous, tomentos underneath, with two glands at the base." Leaves an inch and half or two inches long, obtuse, with a joint. Little branches and petioles with a yellowish down. Spike two inches long, peduncled, terminal, and from the forks of the branches. 52. C. Affolutes. Mart. 24. Willd. 66. Hort. Kew. 3. p. 375. "Leaves oblong-lanceolate, somewhat heart-shaped, fuscous, tomentos underneath, with two glands at the base; little branches more densely tomentous." Willd. "Leaves oval, somewhat heart-shaped, quite entire, fuscate-tomentose on both sides. Little branches more densely tomentous." Hirt. Kew. Leaves two inches long and more, green above, and covered with numerous elevated dots, and scattered ferratulate hairs, with two pedicelled glands at the base, the pedicels tomentos. Spike terminal, and in the forks of the branches. Willd. A native of the West Indies. The last three species are nearly allied. 53. C. leprosum. Willd. 65. "Leaves cordate, acuminate, quite entire, tomentos underneath; little branches more densely tomentous; spikes axillary." Leaves three inches long, green above, and set with numerous ferrulated hairs, densely tomentos, and white underneath. Spike on long peduncles. No glands at the base of the leaves. A native of St. Domingo. 54. C. mucronatum. Willd. 32. "Leaves heart-shaped, roundish, elliptical, obtuse, mucronate, quite entire, tomentos on both sides." Branches and petioles fuscous-tomentos. Leaves relinquent those of melpinus cotoneaster, almost an inch long, thick, on long petioles. Spike an inch, or an inch and half long, axillary, and terminal. A native of the warmer parts of America. 55. C. albo-thalidum. Mart. 39. (Ricinudes, alta hex folio; Plum. Cat. 20.) "Leaves oblong heart-shaped, tomentous; petiole, one inch, or seven feet high, branches covered with a yellowish down. Leaves two inches and a half long, one inch broad, on long petioles; acute, curved on both sides, with down like that on the branches. Flowers in long, loose spikes; male uppermost; corollas white, deeply five-cleft; filaments five, taper; females below; calyxes large, woolly. Capsules round. Sent to Miller from Jamaica by Dr. Houlf. 56. C. aromatice. Linn. Sp. Pl. 14. Mart. 16. Willd. 57. Vahl. Symb. 2. 98. Gurt. tab. 167. (C. tiliaceum; Lam. R. intoidei, circe folus, media; Burm. Zeyl. 202. 11.) "Leaves heart-shaped, fuscous, somewhat terated, petiole; item aborescent." Lam. "Leaves cordate egg-shaped, serrated, fuscous, with petioled glands underneath the base, and on the edges; racemes terminal. Willd. "Leaves oblong, somewhat heart-shaped, finely ferrated, febrons,
Leaves' terminal, erect spikes; males uppermost, from five to seven, smaller, whitish; calyx with five hoary leaves (with five divisions; Lam.); petals five, white, equal to the calyx (smooth and colored without, visibles at the edges and within; Lam.) filaments from twenty to twenty-four (at least six; Lam.) anthers compressed, white; females below, larger, greenish; calyx five leaved (tomentous with five acute deep divisions; Lam.) corolla none; germ three-grooved, hirsute (lightly tomentous; Lam.) style three, white, contiguous at the base, four-parted to the middle (bifid or trifid; Lam.) stigma frist white, then reflexed. Capsule somewhat hirsute. Seeds roundish. The smell of the whole herb is strong and balsamic. Swartz. A native of Jamaica. La Marc's plant was from St. Domingo, and does not appear to be materially different from that of Linnaeus. (C. C. vilm. Mart. 50. Jacq. Amer. pl. 14.) Lam. 167: "Leaves heart-shaped, acuminate, finely serrated, ten-cordate-hispid, undermost, entire, undulate at the edges, tomentose-filiform underneath." Lam. a shrub ten feet high, having in all its parts a pleasant aromatic smell. Leaves green above. Flowers in clove spikes an inch long, coming out before the leaves; males very numerous; females few, either situated below, or intermingled with the males; calyx tomentous, somewhat ferequis; corolla white; styles three, branched, the length of the g. r., reflexed, and embracing it closely. The male flowers are in such vast abundance that when they fall off, they whiten all the ground. In the specimen from which La Marc formed his specific character, and which he believes to be the present plant, the leaves are either entire, or slightly undulate at the edges, not toothed or serrated. A native of the West Indies. (C. bracteatus. Mart. 50. Muhl. (Richins falsus folio; Pet. Hort. fig.) "Leaves heart-shaped, acuminate, tomentose; flowers in terminal and axillary spikes." A shrub near four feet high, with a silvery bark. Leaves about three quarters of an inch long, and half as broad at the base, tomentous on both sides, yellowish-green above, silvery underneath. Flowers small, white; calyxes woolly. Capsules roundish. 62. C. nirtans. Mart. 34. Willd. 47. Swartz. prod. 100. Flor. ind. occ. 2. 1189. "Leaves somewhat coriaceous, egg-shaped, acuminate, entire, smooth, silvery-fuscous underneath; racemes axillary, erect, shorter than the leaves." Leaves covered underneath with minute scales, in each of which there is a pelticoid point. A native of Jamaica. 63. C. nitens. Willd. 52. Swartz. Flor. ind. occ. 2. 1187. (Richins dulcis popusiae fronde argentea; Plek. dich. tab. 220. fig. 5. Bryon. prod. 2.) "Leaves coriaceous, egg-shaped, attenuated, somewhat toothed, green and tomentous underneath; silvery-fuscous; racemes terminal, erect." A native of Jamaica. 64. C. pulchellum. Lam. 7. (Ricinoides folius pulpit hirundif; Plum. Pl. 20. M. 8. 2. tab. 1. 3. Tourn. O. 568.) "Leaves heart-shaped, acuminate, serrated, villous tomentose underneath; spike terminal." A middle-sized tree, but little spreading. Branches cylindrical, clothed with a short down. Leaves alternate petiolate, sometimes a little angular, greenish above, whitish underneath. Male flowers uppermost; calyx with five divisions; petals five, white; stamens numerous; females, calyx quinqued; styles three, bifid. Seeds sprinkled with small black dots. Found by Plumier in the island of St. Vincent. 65. C. Milleri. (C. pulchellum; Mill. dich.) "Leaves heart-shaped, acuminate, light green above, woolly underneath; spikes short, lateral." A shrub, six or eight feet high, covered with an all-coloured bark, sending out many irregular branches. Leaves near four inches long, and two in their widest part, on slender pedioles. Leaves.
**CROTON.**

*Flowers* white or green. Sprt from Jamaica to Miller by Robert Millar. 66. *C. quadrifo1ium.* Lam. 19. 

"Leaves slightly heart-shaped, acuminate, finely serrated, rough, tomentous, with four bristles underneath at the base. Branches tomentous towards the top, with separate hairs which render the same somewhat fimbriated. *Leaves* petioloated, whitish above and rough, with woolly points, very woolly underneath; with four rather long bristles at the base, each terminated by a truncated obtuse gland. Flowers in nearly terminal, woody racemes, six inches long or more; calyx of the males tomentous, five-leafed; petals three, tomentous on the outside; filaments more than twenty, beardcd at the base, but not at all united. Found by Domby in Peru. 67. *C. purpurea.* Willd. 52. Jucq. in car. 3. tab. 632. Collect. 4. p. 27. "Leaves deeply heart-shaped, very acuminate, finely serrated, feabrons, tomentous underneath, with four glands at the base." Glands pedicelled, two on each side at the base of the leaf. A native of the Caracas. It differs from the preceding in the form of the leaves, but seems only a variety. 68. *C. peniculatum.* Willd. 53. Ventenat choix 12. tab. 12. (C. ciliato-panulifolium; Orteg. dec. 4. 51.) "Leaves heart-shaped, acuminate, quite entire, pinnately ciliated, tomentous underneath, with a penicil-like bundle of pedicelled glands at the base, and two others at the base of the petiole." A flab; little branches hairy-pubescent. Flowers in an inch long, axillary, near the top of the branches; filaments not united. A native of Cuba. 69. *C. macrophyllum.* Mart. 27. Willd. 54. Swartz. prod. 100. Flor. ind. occ. 2. 1766. "Leaves cordate-rotate, acuminate, quite entire, thick, tomentous, nerved underneath." A native of Jamaica. 70. *C. tiliafolium.* Lam. 11. "Leaves heart-shaped, roundish, feabrous, somewhat serrated, petiololed; racemes axillary." A small tree, with greyish bark. Upper part of the branches, petioles, nerves of the leaves, peduncles and calyxes whitish-tomentous. *Leaves* alternate, feically acute, on very short petioles. Found by Commeron in the Ills of France and Bourbon. 71. *C. coriifolium.* Lam. 8. "Leaves heart-shaped, roundish, acuminate, serrated, dotted, nearly smooth on both sides." Small branches, petioles, peduncles, nerves of the leaves and young leaves somewhat tomentous and whitish. *Leaves* alternate, petiololed, sometimes a little angular. *Branches* four or five. Flowers in nearly unpedicelled, solitary, lateral, near the tops of the branches. *Flowers* pedicelled. A native of the Antilles. 72. *C. moluccanum.* Linn. Sp. Pl. 15. Mart. 19. Lam. 15. Willd. 55. (Nux jugjana moluccana bispa; Burm. zey. 179. Camirium; Rumph. amb. 2. 180. tab. 68. Ca- mimium cardiifolium; Gart. tab. 125. fig. 2. Ambius five bancouli; Commer. MSS. Herb. and fig.) Nuts of Bancoul. "Leaves heart-shaped, angular, feabrous, tomentous underneath." Lam. 11. "Leaves somewhat heart-shaped, angular, obtuse, repand, feabrous, tomentous underneath." Willd. 8. "Leaves heart-shaped, angular, with two glands at the anterior part of the base; calyxes of the male flowers two parted." Lam. A thick low tree, branched like the common walnut tree. *Leaves* alternate or scattered, near the ends of the branches, large, with three or five angular lobes, smooth on both sides when completely unfolded, covered with a reddish trachy down when young; sometimes obtuse, acute, nearly entire; petioles rather long. *Flowers* in a terminal, much branched peduncle; males very numerous, on angular tomentous peduncles, without bracte; calyx tomentous; divided into two oval concave lobes, opposite to each other and almost equal; petals five, oblong, linear, almost twice the length of the calyx; stamens about ten, feerately longer than the calyx; females not seen by La Marck. Fruit a nut, broader than long, traversely oval, with a short point at its summit, containing, under a falk somewhat resembling that of a common walnut, two woody phlis (noyaux) about the size of a chefnut, rounded at the base, pointed at the summit, a little compressed laterally, with a cavity in the inferior side, whitish, one-celled, enclosed in a pleated fatted kernel or seed. A native of the Moluccas and Ceylon, and according to Commeron, naturalized in the island of Bourbon. We have confined ourselves to La Marck's description as it is the fullest, and taken from specimens recently obtained from Commeron. Nothing can be more evident than that it cannot belong to the genus; and it is surprising that La Marck, who is generally ready enough to correct Linnaeus, has paused it over with slightly observing that in its fruit it approaches a Eruca, a new genus formed for a plant found by Forst in the islands of the South Sea. Jussieu afterwards observed, that it ought to be referred to that genus, which Gatter has since called camirium, the original name in Rumphius, and of which he has given the following corrected generic character from the MS. notes of Dr. Schander. Male and female flowers separate on the same plant. *Male*: calyx one-celled; sepals two, three or four-cleft; one segment larger; corolla with five petals, oblong, narrowed at the base, invested into the receptacle, longer than the calyx; stamens several, up to sixteen. *Female*: calyx and corolla as in the males; nectaries; five egg-shaped glands within the base of the petals; germ superior. *Drupe* dry, two-celled. *Seeds* solitary, succulentaceous. The kernels of the prefect plant yield abundance of oil, which is used in the country for candles and other domestic purposes. 73. *C. galipifolium.* Mart. 48. Will d. 73. Vahl. symb. 2. 98. tab. 49. "Leaves heart-shaped, three-lobed, tomentous, with two glands underneath at the base." A tall tree. *Branches* cylindrical, tomento-oblong at the top. *Leaves* clustered towards the ends of the branches, alternate, nine inches long or more, thinly and feilily toothed, tomentous on both sides with fribated hairs, white underneath, folt; lobes egg-shaped, acute, middle one elongated; petiole one-third the length of the leaf. *Raceme* about a foot long, terminal, erect, tomentous. *Flowers* numerous, serrated, males internerved with females; germ hifrate, hairy, a native of the island of Trinidad. 74. *C. capense.* Linn. jun. Supp. 432. Mart. 21. Willd. 68. Thunb. prod. 117. "Leaves three-lobed-haftate, and lanceolate, quite entire. A native of the Cape of Good Hope. 75. *C. pyriferum.* Lam. 33. Willd. 67. "Leaves hafiate-oblong, tomentous underneath; flowers crowded, almost ififile; capsules fefifhning." *Branches* slender, cylinrical, with a brown bark, clothed with fferated fribated hairs, white and almost tomentous near the top. *Leaves* generally alternate, feicularly an inch long, on short petioles. *Flowers* near the top of the branches; style three, tomentous on the outside. *Gyphila* globular, with three roundifh lobes; covered with white, fivery, orbicular fcales, which are dotted in the middle. Found by Adamson in Senegal. 76. *C. tribulatum.* Willd. 72. "Leaves three or five-lobed, serrated, pubefcent underneath; petioles pubefcent." Exactly similar to C. lobatum (n. 95) except in its woody flam, and the pubefcence of its leaves and petioles; flammers ten, not united.

**Herbaceous.**

About three feet high. **Root** spindle-shaped, the length and thickness of the finger, white, fun-gous, fibrous. Stem cylindrical, appearing woody, but tender and full of pith, pithenin, rough with stiff sharp hairs; branches somewhat zig-zag. Leaves alternate, near the bottom of the peduncles, sometimes acutely serrate. Flowers large, hanging, white, forming a globular head, white, the corolla five-cleft; petals white, woolly, the length of the calyx; filaments about twelve; females; corolla none; germ: egg-shaped, villous; styles five; stigmas simple, obtuse. **Capsules** pedicelled, trigonous, obtuse, villous. Cultivated in Japan. 83. **C. capitatum** Wild. 30. "Leaves oblong-oval, obtuse, rounded at the base, entire, toothed on both sides; female flowers clumped in a kind of head at the base of the spike." Petioles. Little branches, calyxes, and capsules tomentos-woolly. Stem erect. A native of North America, in the country of the Illinois. 84. **C. argentatum** Linn. Sp. Pl. S. Mart. 8. Lam. 41. Wild. 31. "Leaves cordate-egg-shaped, entire or slightly fleshy, tomentous underneath; Hipules ciliate; spikes terminal, somewhat capitate, bracteate." Stem from eight inches to a foot high, pubescent, whitish, forked or trifid at the summit. Leaves petioled, alternate on the stem, opposite at the ends of the branches, soft, greenish above, with short filiform hairs which make the surface finely dotted, tomentous and almost silvery underneath. Flowers white, clumped, in short terminal spikes; bracteae three, oval, bifid, toothed. A native of South America, about Vera Cruz. 85. **C. hirtum** Mart. 28. Lam. 38. Wildl. 27. Heir. Str. 17. tab. 9. "Leaves egg-shaped, fleshy, with glandular hairs at the base, spikes fiddle; item hemipid." Stem erect, cylindrical, glandular, with tomentose hairs on each gland, dichotomous or trifid at the top. Leaves about three inches long, two and a half broad, alternate, except the uppermost, spreading, unequally furred, acute, with three principal nerves, veined, wrinkled, hispid on the nerves, pale green on both sides, with a few pedicelled glands on the edge at the base, not on the petition; illi-pules two, awl-shaped, hairy, permanent, surrounded at the base by several tufted glands. Flowers of a dusky herbaceous colour, fiddle, clumped in short spikes both terminal and from the forks of the branches; bracts under each flower, the length of the calyx, linear, ciliated on each side, from three glandular hairs, males above; calyx five-leaved; corolla five-petalled; filaments ten; females below; calyx five-leaved; corolla none. **Capsule** rugged, rough with hairs. It differs from **C. palustris** in having fiddle spikes, not axillary; and leaves three-nerved, not parted, nor the nerves parallel: from **C. glanduliferum** in having pedicelled glands. A native of Guiana. 86. **C. uriciferum** Lam. 39. Wildl. 49. "Leaves egg-shaped, somewhat cordate, acute, ferrated, petioled, spikes hairy, terminal; calyxes reflexed." About a foot high. Stem cylindrical, tubular, branched and dichotomous in its upper part, clothed with white hairs near the summit. Leaves tomentose, resembling those of **urtica dioica**, the common stinging nettle, or of lamium album, the white dead nettle, alternate, green on both sides, set with short filiform hairs chiefly on their nerves and upper surface. Female flowers pedicelled, segments of the calyx five, egg-shaped, obtuse, villous and whitish on the outside, dull red within; germ trigo-nous, woolly and whitish; styles five, slightly bifid, coloured. Found by Commeron in Brazil. 87. **C. viridiflorum** Wild. 10. "Leaves roundish, egg-shaped, acute, finely ferrated, oblongish heart-shaped, petioled, pubescent underneath; spikes at the top and in the forks of the branches." Branches dichotomous, smooth. Calyx of the female flowers villous. **Capsule** pedicelled, set with scattered filiform hairs. Found by Humboldt in South America. 88. **C. trigynum** Lam. 43. Wildl. 24. "Leaves
croton

"Leaves ovate-oblong, acute, finely serrated, tomentous; petals deciduous with a tomentous-woolly base." A foot or a foot and half high. Stem slender, herbaceous, but rather hard. Leaves three or four inches long, alternate, sometimes almost opposite, rounded at the base, with two small glands near the petiole, felted, nearly sooth and finely dotted above, tomentous and reddish-white underneath; petals woolly and reddish. Spike terminal. defere, short, feffile, tomentous, ferruginous; flowers feffile; filaments ten or twelve. Found by Commeron in Brazil. 89. C. chenopodioides. Lam. 43. (Tragia mercurialis \& acalypha indica \&). Linn. Acalypha repens; Willd. Mahott minima chenopodioides; Plum. Sp. 28. (Burn. Amer. tab. 171. fig. 2. Urtica minor inus; Spreng. Syst. Nat. 182. tab. 82. fig. 3.) "Leaves somewhat heart-shaped, ferrated, smooth, spikes terminal." Stems several, four or five inches long, slender, short, more or less ecart, branch, leafy. Leaves alternate, petioled, bright green. Flowers very small; males uppermost; calyx purple, with four divisions; stamens numerous, very white; females with eight divisions; germ rondhidi, stylos three, villous. Fruit reddish, villous, triquadratic. A native of S. Domingo and Jamaica. 90. C. ricinocarpus. Linn. Sp Pl. 17. Mart. 18. Lam. 46. Willd. 58. (Mercurialis androycyna; Ver. Chl. 98. Roy. Lugdub. 203. Ricinocarpus americana, flore albo fipica; Boerh. Lugdub. 1. 234.) "Leaves somewhat heart-shaped, crenate; peduncles in racemes opposite to the leaves." Root annual. Stem an inch high; branches alternate. Leaves alternate, petioled, smooth. Flowers in distinct clusters, males and females intermingled; common pedicle longer than the leaves; calyx three-veined, narrow, white. A native of Surinam. 91. C. tinctorium. Linn. Sp. Pl. 6. Mart. 6. Lam. 42. Willd. 20. Gart. tab. 107. (Ricinoides ex qua paratur Turnefol Gallereum; Turn. Infl. 655. Nifol. Aa. 1712. p. 339. tab. 17. Heliotropium; Bauh. Pin. 253. Rau. Hift. 165. H. minus tricoccum; Cluf. Hift. 2. 47. H. parvum Dioecoides; Lobb. Lc. 61.) "Leaves ovate-rotboidial, repand, quite entire at the base, hoary on both sides; racemes terminal; capsules squamous-pubescent, pendulous." Root annual. Stem a foot high, cylindrical, branched, sometimies dichotomous, leafy, tomentous, whitish. Leaves near two inches long, one inch and a quarter broad, alternate, undulated, often plaited, clothed with short flaxelled hairs; petals slender, near four inches long. Flowers in short feffile ra- cemes, at the extremity and in the forks of the branches; males moft numerous, alomft feffile; calyx tomentous, five-veined; petals five, lanceolate; filaments eight, monadip- phous; females on rather long pediciles. Capsule roundish, three-furred, tricoccous, tubercled. A native of the south of France, Spain, Italy, and Barbary. It is from the juice of this plant, called heliotropium or turnfole by the old botanists, that the colouring matter is obtained is fold by the druggifts under the name of turnfole, and not from the helanthus annus, our common garden fon-flower, as some have erroneously supped. See Turnfole. 92. C. plicatum. Mart. 43. Willd. 21. Vald. Symb. t. 173. (C. tinctorium; Burn. Ind. 304. tab. 62. fig. 1. \& Lam.) "Leaves egg-shaped, obtuse, plaited, crenate, hirsute, hoary underneath, with two glands at the base; racemes few-flowered, terminal." Root annual. Branches cylindrical, somewhat fcaprous, hoary, hirsute on the upper part, with dense flaxelled hairs. Leaves refembling thole of helio- tropium fupinun, half an inch long or more, wrinkled, rounded at the tip; petiole the length of the leaf, with a purpulish gland at its top, and two underneath at the base of the leaf. Inflorescence as in the preceding species. Capsule violel purple, pendulous. A native of Arabia Felix and the East Indies. 93. C. obliquum. Mart. 44. Willd. 22. Vald. Symb. t. 78. (C. argenteum; Forfik. \& Egypt. 75. n. 491.) "Leaves ovate-lanceolate, quite entire, tomentous, without glands, firm tomentous." Nearly akin to the preceding, but the hairs are less distinct, so that the whole plant appears tomentous; the leaves also are narrower and oblique on one side at the base. A native of Egypt, 94. C. verae-foliola. Willd. 23. (Ricinoides ex qua paratur Tournefoll Gallereum folio oblongo \& villoso; Tourne. Cor. 45.) "Leaves ovate oblong, repand, petiolated, tomentous on both sides, soft; racemes terminal; capsules scaly-pubescent, pendulous." Root annual. Stem dichotomously branched, denfedley clothed with a white cottony down. Leaves two or three inches long. Flowers on long peduncles in proportion to the length of the race- mes. Capsules purple, covered with white scales. Perfectly diffi- 


croton folius ovato-lanceolatis; Roy. Lugdub. See Tragia involucrata.

croton bofiliaturn at ureus; Linn. See Tragia canna- lina. croton lobatum; Forfik. See Jatropha glauca. croton pinofinum; Forfik. See Jatropha pinifola. croton variogata; Forfik. See Jatropha variogata. croton villosum; Forfik. See Jatropha glandulosa. Obi. La Marek jully observes, that the generic dilinctions of croton, tragia, and acalypha are purely artifi- cial, and that they fometimes separate plants which, on a ge- neral comparison of their natural characters, will be found closely allied. He adds, that he fees no good reafon why jatropha gellypifolia, f. curcas, and fome others are not placed
placed among the crotona. It is evident, from the enumeration of species given above, that, as far as croton is concerned, these artificial distinctions have by no means been carefully observed in practice; and that the whole natural order must be more accurately investigated, before its really distinct genera and their true generic differences can be determined.

Propagation and Culture.—C. tinctorum, (n. 91.) is the only plant of this genus which grows naturally in Europe, but being peculiar to the southern part, cannot be raised in our climate without some care and attention. The seeds should be sown in the autumn, soon after they are ripe, in a small pot filled with light earth, and plunged into an old tan bed in a frame. In the spring the pot should be put into a fresh hot-bed, and when the plants are fit to be moved, which will be in about a month, they should be set separately in small pots, plunged into another fresh hot-bed, and tendered from the sun till they have taken root. The air may then be gradually admitted to them, according to the warmth of the season, with only a small allowance of water. By this treatment, and by this alone, Mr. Miller was able to procure perfect growth. All the other species, being natives of warmer countries, require a greater degree of artificial heat. The shrubbery kinds must always be removed into the dark-room in the autumn, and must be kept in a moderate temperature throughout the winter, when, as their leaves are not deciduous, they make a pleasing variety among other plants. Most of them may be increased by layers or cuttings, or both.

Croton, or Corona, Crotona, in Ancient Geography, a town of Italy, in the most eastern part of the Bruttian territory, situated on a small gulf north-west of the promontory Laconium. The Boeotians, who first traversed this coast, are said to have been the first founders of the city. But Strabo, Dionysius Hacarnnænus, and others, trace it to a Greek origin; and ascribe its foundation to Mycelius, chief of the Achaeans in the third year of the 17th Olympiad, B. C. 710. This Mycelius, it is said, being come to Delphi to consult the oracle of Apollo, about the spot on which he should build his city, met Archias the Corinthian there, who was arrived upon the same account. The god gave him a favourable audience, and after having fixed the purport of each with regard to the place that would best suit their respective purposes, he proposed different advantages to them, and left them, among other particulars, the choice of riches or health. The offer of riches interceded Archias, but Mycelius preferred health; and if we may credit history, Apollo faithfully performed his promise to both. Archias founded Syracuse, which soon became the most opulent city of Greece. Mycelius laid the foundation of Croton, which acquired such reputation for the long life and innate strength of its inhabitants, that its name was used proverbially to signify a very healthy spot, the air of which was extremely pure. The people signalized themselves by a great number of victories in the Greek games; and Strabo relates, (1. iv.) that in the same Olympiad, when Crotonians were crowned in the Olympic games, and carried off all the prizes of the field. Crotona was also famous for its military achievements, and its schools of philosophy. In a contest with the Sybarites, 100,000 Crotonians, headed by the famous champion Mle, over whose shoulders a lion's skin was thrown, and himself armed with a club, like another Hercules, gained a complete victory over 500,000 Sybarites, to the great satisfaction of their city, and was held in the highest estimation among the ancients, "that the last of the Crotonians was the first of the Greeks," and it was also said, "that in comparison with Crotona, other cities were little worthy of choice." In process of time, however, its glory declined; and 130,000 Crotonians were defeated by the Locrians at the battle of Sagara. It never recovered itself from this loss. Pyrrhus, having ravaged Crotona, and the city being too sparsely for its inhabitants, it was reduced almost one-half its extent; and the river Alarius, which traversed it before, only washed its walls. The Romans having pursued Hasmail from this coast, reduced Crotona under their dominion, and under the consulate of P. Cæcilius Secpto and T. Sempronius Longus, in 539, it became a Roman colony.

Croton river, in Geography, a north-easterly water of Hudson's river, in North America, which rises in the town of Fairfield in Connecticut, and running through Dutchess county, discharges itself into Tappaw bay. Croton bridge crosses this river three miles from its mouth, in the high road to Albany. This bridge is 1400 feet long, supported by 16 stone pillars. Croton falls present from this bridge an interesting object; the water precipitating itself 60 and 70 feet perpendicularly, with high slate banks, in some places 100 feet; and the river spreading itself into three streams, as it enters the Hudson.

Crotona, in Ancient Geography, a town of Italy, in the Trryrhenian territory, according to Steph. Byz.; Polyenius calls it Coronta, and places it in the interior of Elis.

Crotonia, in Geography, a town of Naples, in the province of Casabia Uitra; 12 miles call-fourth-east of St. Severina.


Gen. Ch. Male flowers situated above the females. Call, deeply five-cleft; segments egg-shaped, obtuse, a little concave. Cor. Petals five, shorter than the calyx, and alternating with its divisions, linear, oblong. Stam. Filaments five, the length of the calyx; anthers two-celled. Females below in the same spike. Calyx as in the male, but with awl-shaped segments. Cor. none. Pyl. Germ egg-shaped; filaments three, almost cellular, very short, bident. Peric. Capsule short, small, rounded-ovate, one-celled, not dentiform. Seed elliptic, almost globular, adhering to the upper part of the capsule; embryo revolute, like the seed, enclosed in a very thick, fleshy, cup-shaped coat.

Eff. Ch. Male, Calyx five-cleft; petals five. Female, Capsule with one seed, not dentiform.

Sp. C. linearis. Wild. 1. Poir. Michaux Amer. 2. 186. tab. 46. "Leaves linear-lanceolate." A weak herbaceous plant, covered in all its parts with white downy scales like those of Hippophae rhamnoides. Stem erect, slender, filiform, dichotomous. Root annual. Leaves about an inch long, alternate, nearly sessile, flat, narrow, quite entire, obtuse, or very slightly acute at the summit, green above, fitch and bright with minute falcately hairy. Flowers in small, simple, slender spikes at the extremity of the branches; some of them axillary, on very short pedicels, alternate, small, with a very short bracteate at the base. A native of Carolina, and the country of the Illinois. 2. C. elliptica. Wild. 2. "Leaves elliptical, oblate both at the top and the bottom." Refembling the preceding, but the petals are shorter, and the leaves only half the length, and three times the breadth, rounded above and below. A native of Carolina.

Crotophaga, in Ornithology, a genus of tires, having the bill compressed, semi ovate, arched, and carinated on the back, upper mandible angular at each edge; nostrils perruous;
previus; tongue compressed, and subulate at the tip; feet, in general, formed for climbing.

Species.


The length of this bird is thirteen inches and a half; its colour throughout black, partially glossed with purple, and about the neck faintly tinged with green on the margins. The base of the bill is black, with black tresses, which turn forwards, and the eyestalks are furnished with long hairs resembling eye-lashes. The tail is six inches long, of a very tawny form, and like the rest of the ani tribe, composed of ten feathers; the tips are black, and have the toes placed two before and two behind. This curious species is found in Jamaica, St. Domingo, and other islands in the West Indies, and also in Cayenne, and other parts of South America. Contrary to all other birds they live in societies, a number of them occupying a single nest in the construction of which they labour in concert, and make it sufficiently spacious for the reception of the whole company. After laying their eggs they sit on them close to each other in order to hatch them, each unanimously endeavouring to do their best for the good of the community, and when the young are hatched, the old birds attend mutually to the wants of the whole flock. Those birds have generally two broods in a year, and sometimes even three. The eggs are about the size of those of a pigeon, and of a tawny-green colour, spotted at the ends. The food of these birds consists of worms, insects, fruits, and grain, in quest of which they are usually seen in flocks of twenty or thirty together. Like the common jay, they make a chattering noise, and are in no esteem as an article of food.


This species exceeds the last in point of size, being as large as the jay, and measuring eighteen inches in length. The bill is of a more lengthened form, and rises higher on the top; the colour of its plumage corresponds with the other, except in having some of the feathers edged with green. It is affirmed that these two birds never associate with each other, though the manners of both are very nearly the same. Their haunts are different, the smaller ani frequenting the open savannahs, and the larger only the fall marshes near the sea-coasts. They are of a droll disposition, easily tamed, and may be taught to speak like the parrot. The male and female are alike in the colour of their plumage.

VASSA. Variegated with rufous and black; feet formed for climbing. Crotophaga varius indicus, Ger. Oim. Varied ani.

Length 11 inches; bill black, and curved: head, throat, and breast black; larger and middle wing-coverts, and also the tail black, the latter long; the rest of the body tawny-rufous; legs tawny-sulphous.


This appears to be a very ambiguous species; it is described on the authority of Linnaeus, who informs us that it agrees with the two first mentioned species, except in the situation of the toes, which are placed three before, and one behind. The bird, according to Linnaeus, is found in Surinam.

CROTOPHAGA, a name given by Forssl (Fawn. Arab.) to the rock of Buffon, the black billed hornbill of Latham, and the Bucerous nares of Gmelin.

CROTONE, a town of Germany, in the circle of Wetzphalia, and duchy of Berg; 11 miles south-east of Osnabruck.

CROTON, Linn., a small town of France, in the department of the Gironde, not far from the mouth of that river; 15 ½ miles north-east of Abbeville.

Crottendorf, a village of Saxony, in the circle of Leipzig; a very little distance from Leipzig, which, together with Angr and Reudnitz, two other villages, goes by the general name of the Taldergarten (cabbage gardens), and constitutes one of the favourite walks of the inhabitants of Leipzig, and of the numerous strangers who visit that city at the time of its fairs. The fields of these villages are particularly devoted to horticulture, and are supplied to yield above twenty pounds sterling a year annually.

Crotzka, a town of Hungary, on the south side of the Danube, where a severe and destructive battle was fought in the year 1739, between the Imperials and the Turks; it is 15 ½ miles south-east of Belgrade.

CROU. See Crou.

CROCCHU, a river of England, in the county of Essex, which runs into the sea; 10 miles north-east of Richmond, celebrated for its oyster-beds.

CROUCH-HILL STATION, near Banbury, in Oxfordshire. In the centre of the spot on the top of this noted hill, a station was chosen in 1759 for the government trigonometrical survey, and its situation was determined by an observation from Brill, distant 102 628 feet, bearing 39° 49' 7" south east from the parallel to the meridian of Dunmow, and another from Epwell, distant 29 695 feet; whence it is deduced its latitude is 52° 2' 59.6' N., and longitude 1° 21' 11.6', or 5° 28'. W. of Greenwich. This station was used with Epwell for determining the following places, viz: Adderbury, Aynho, Bloxham, Deddington, and Faringthoe churches.

CROUSE, a river, in Essex, is navigable from the Thames, near its mouth at Fulling's point, to Hull bridge. See CANAL.

CROUCH-NA-MALLEN, mountains in the northern part of the county of Mayo, Ireland.

CROUL, or Crou, Linn., a small river of France, in the department of the Seine, which has its source near Troyes, and falls into the river Seine near St. Denys, six miles north of Paris.

CROUP, in Medicine, a disease of children, characterized by difficult breathing, with a peculiar ringing or croaking sound of the voice in speaking and coughing. It may seem extraordinary, that a disease, so distinctly marked, should not have been accurately described before the middle of the 18th century. Authors, indeed, had noticed a dangerous angina, in which no tumour was to be seen in the neck or throat; but the peculiar symptoms of croup were not observed. Dr. Home of Edinburgh was, perhaps, the first to give a distinct account of the disease, in his treatise on the suffocato frivida, or croup, in 1765. Michælis, however, who afterwards published a work on this subject, calling the disease angina polyposa in membranarum, Argentorati, 1778, says, that Martin Glott, an Italian physician, published the first regular history of croup, in his "Lettere Mediche," Cremona, 1749. The disease is now well known in this country, especially on some parts of the sea-coast; but the inland counties are by no means free from it.
CROUP.

Croup seldom attacks infants before they are weaned; but after being weaned, the younger they are the more they are liable to it. As children advance in age, they are less subject to its attacks, and are rarely affected with it after the age of twelve years. But Dr. Cheyne saw the croup in a child of three months old at the breast; (Effay I. on the Diseases of Children, Edin. 1831.) and Mr. Rumfrey observed it in a boy of thirteen, and in a girl of fourteen years of age. (Transact. of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. ii. p. 25.) Although it often attacks several children in the same family, it does not appear to be contagious. Mr. Rumfrey remarks, in the excellent paper just quoted, that only one child in the work-house at Cheltenham had the disease, when it was epidemic in that part of Buckinghamshire, although there were between twenty and thirty in the house; and similar exemptions occurred in families, where no cases were taken to prevent the intercourse between the sick and the healthy.

The croup generally begins with a short dry cough, wheezing, and other catarrhal symptoms, the general health not appearing to suffer. Soon, however, the wheezing becomes more observable, the cough more troublesome, and marked by a peculiar thrill found, the respiration is performed with a wheezing or closing noise, and at length grows very difficult and labious. "At the beginning, or in lighter cases," says Mr. Rumfrey, "the found of inspiration resembled the passing of air through a piece of mullein; afterwards there was no noise from a brazen tube. The cough was attended with a peculiar thrill found, even at an early period of the disease, as well as the voice, where there was not a perfect hoarseness. Dr. Home describes it "vix inferius cantus gallus." I have heard those about the sick compare it to the noise which a fowl makes when caught in the hand. This peculiarity, however, is not easily expressed by words, but a knowledge of it is readily acquired by observation. I have known the sound of the cough alone greatly shock an unfortunate parent, who had already lost one child with the complaint."

By the end of the second, or on the third day, sometimes sooner, symptoms of affection of the larynx take place, as white tongue, thirst, increased heat, and frequent pulse; and the disease advances rapidly, not merely from violent general affection, but from the influence which it has upon the organs of respiration; the difficulty of breathing becoming now very distressing, the countenance being often flushed, and great inequility and a continual inclination to change from place to place supervening. The child at the same time eagerly puts its fingers into its mouth, as if to pull away something which sticks in the passage.

All the symptoms are increased during the night, throughout the disease.

The cough is at first dry; but by the third day or sooner, the passage of the air is obstructed by viscid matter in the trachea, some of which is occasionally thrown up by coughing or retching. Occasionally also, portions of a film or membrane, of a whitish colour, are thrown up by violent coughing or retching; and the efforts made to dislodge it are often so distressing, that the child appears to be almost in a state of flagellation. This is succeeded by an abatement of all the symptoms, until a fresh quantity of the same substance is formed, when the distress recurs as before.

In many cases, the difficulty of breathing and appearance of suffocation are increased by paroxysms, so as to occasion extreme anxiety and inquietude, and suggest the idea of asphyxia. And in other cases the disease, after continuing some time, appears suddenly alleviated; the breathing is free, cheerful, appetite, and a disposition to amusement, take place. But a change, for the worse, comes on as suddenly, and death ensues; the livid and swelled face, and convulsive struggles, giving the little patient every appearance of one actually strangled.

When the internal symptoms are viewed, as Dr. Cullen has observed, they are sometimes without any appearance of inflammation, but frequently a redness and swelling appear. But Mr. Rumfrey remarks, that most of the cases which occurred in the winter were attended with inflammation and swelling of the tonsils, uvula, and velum pendulum palati; and frequently large films of a white substance were formed on the tonsils. The swelling, however, was usually less impeded than might have been expected.

It is important to observe, that the danger in this disease is not to be estimated by the general state of the body; for there may be imminent danger, although hardly any symptoms of general disease have been noted. Those who expect to meet with a considerable affection of the larynx, will not be aware that so formidable a disease has begun its progress; since, for the first day or two, the child has only a slight cough and hoarseness, is in good spirits, perhaps even running about the room, and enjoying its amusements. The skin is often hot and dry, as the disease increases; but sometimes it is moist and relaxed throughout. Several inflections of croup, terminating fatally in twenty-four hours, are recorded; more frequently, however, the child does not die before the third or fourth day, sometimes much later. When it terminates favourably, generally after having arrived at its height, a hoilure is poured out on the skin, the fever declines, and the croup relieves; and, finally, the cough gradually wears away, after an expectation of films and matter from the wind-pipe.

The croup, as has been invariably evinced by dissection, consists in inflammation of the internal membrane of the wind-pipe; in consequence of which, a white pus-like matter is poured out, which ultimately is converted into a soft membrane, of considerable tenacity. This impedes respiration, and finally suffocates the patient. This membranous lining appears to arise a little under the larynx, and is sometimes prolonged into the division of the trachea; and generally a quantity of a white fluid, like that brought up by the cough, is seen gurgling up on dissection. The attachment of the membrane is slight; and it is often found lying in a great measure loose in the trachea. This fact is commonly found free from any erosion or ulceration; but it frequently shows the vellages of inflammation, and is covered with the white matter before mentioned.

As the disease is hence considered to be a peculiar inflammation of the trachea or wind-pipe, the usual remedies of inflammation have been generally adopted; and, when early employed, have often proved effectual. Bleeding, both general and topical, has often given immediate relief; and, by being repeated, has entirely cured the disease. The application of blisters to the external surfaces has likewise been found beneficial. Vomiting, after blood-letting, seems to have been of frequent advantage, and sometimes suddenly relieves the disease, by promoting the discharge of the matter exuding from the lining of the trachea, or of the membrane, if already formed. The warm bath; fomentation, and the inhalation of the vapour of hot water, have been also used with occasional benefit.

All these expedients, however, too often fail of arresting the progress of this fatal disease. In addition to these, Mr. Rumfrey administered cicuta; and also ether, in small and repeated doses, where the heat did not forbid it, and when symptoms.
symptoms. But there were equally instructive. Dr. Culler had already observed, that although he supposed that a spasm of the glottis is often fatal in gout, he had not found antispasmodic medicines of any use. Children are very prone to expectorate, and emetics afford the only means of discharging the matter which collects in the trachea; the relief thus obtained, is, however, commonly temporary only. After losing several patients, under these modes of treatment, Mr. Rumsey had recourse to the use of calomel, in the dose of from half a grain, to a grain or more, every four hours, accompanying it, in some cafes, with mercury. Under this management, he succeeded in carrying the disease to a safe termination in a number of instances. The cafes are related at length. (Loc. cit.) He concludes, however, with these candid and philosophical observations. "More extensive experience than I have yet had is requisite to determine whether, in mercury, we shall find a certain remedy for the disease. With regard to the above cafes, it should be observed, that some recovered when mercury was not administered, or in such quantity as not to produce any effect; and in two patients, under the care of my brother, it was given unsuccessfully. Moreover, the disease was less severe towards the end of the epidemic constitution, which was the period when we adopted this plan: so that, admitting that all those patients, who recovered under such treatment, were cured by mercury, it does not follow that the same effects would have been produced, had it been given in the early cafes; yet it surely merits farther trial, the ordinary mode of treatment being so unsuccessful." See Trans. of a Soc. for the Improvement of Med. and Chr. Knowledge, vol. ii. Cullen, First Lines, § 318.

Home on the Croup. Michaelis de Ang Lia Polyopolea.

Croup of a horse, in the Manège, the extremity of the reins above the hips. It should be large and round, so that the tops of the two haunch bones be not within view of each other. It should have its compas from the haunch bones to the very duck, or osset, of the tail; and should be divided in two by a channel, or hollow, all along to the neck. A rocking croup is when a horse's fore-quarters go right, but his croup swings from side to side; when such a horse trots, one of the haunch bones will fall, and the other rise like the beams of a balance; a sign that he will not be very vigorous.

CROUPEADE, a leap in which the horse draws up his hinder legs, as if he meant to shorten and truss them up under his belly. See Balloèdee.

CROUPER, or Crupper. See Crupper.

CROUPIERE, in Geography, a small town of France, in the department of Puy-de-Dôme, on the river Dore; 24 miles E. of Clermont.

CROUSAZ, John Peter de, in Biography, a Swiss divine, was born at Lausanne in the year 1660. He was intended, by his father, for the military line, and was accordingly instructed in all those branches of knowledge that are necessary to that profession. His attachment to literature and science was from conspicuous, and he was allowed to follow the bent of his inclination, under very able professors at Geneva and Lausanne. Here he studied very diligently mathematics, philosophy, and theology, and in 1682 he fought farther improvement at Leyden, and from thence he went to the university at Paris, where he became acquainted with father Malhrance, and other eminent characters. Two years afterwards he was ordained minister, and appointed professor. During 14 years he continued pastor of the church of Lausanne, and was exemplary and indefatigable in every undertaking. At this place he obtained other preferments, and in 1724 he was appointed mathematical and philosophical professor at the university of Groningen, and shortly after was elected a foreign member of the royal academy of sciences at Paris. He was next appointed tutor to prince Frederic of Hesse-Cassel, an office which he filled with great reputation till the year 1732, when, on account of his excellent character, he was nominated counsellor of embassies to the king of Sweden, uncle to his pupil, attended with a suitable salary. In 1736 he was elected professor of philosophy and mathematics in the academy of Lausanne, with the power of appointing a substitute, when either his health or increasing years should render such assistance necessary. He died in the year 1743, leaving behind him a high reputation as a scholar and a Christian. His works are very numerous, and on various branches of literature; but he is chiefly distinguished for his treatises on Logic, of which the principal is entitled, "A System of Reflections that may contribute to the Illustration and Extension of Knowledge, or a new Essay on Logic." This was first published in two vols. 12mo, and afterwards enlarged, and appeared in the duodecimo form. In 4 volumes. He was a strong defender of the Christian religion, and engaged in the well-known controversy with Anthony Collins. We have treatises likewise from the pen of Crouzaz on geometry, algebra, and on several branches of metaphysics and polite literature. Moreri.

CROUZE, SOUS-CROUTE, or Krouze. As this preparation of cabbage has been found of sovereign efficacy as a preservative in long voyages from the sea-fury, it may not be unacceptable to give a concise account of the processes for making it, according to the information communicated by an ingenious German gentleman.

The founderd and most solid cabbages are selected for this use, and cut very small, commonly with an instrument made for this purpose; not unlike the plow which is used in this country for slicing cucumbers. A knife is used, when the preparation is made with greater nicety. The cabbage thus minced is put into a barrel in layers, hard, and over each is crowded a handful of salt and carrageeeds; in this manner it is rammed down with a rammer, firatum super firatum, till the barrel be full; when a cover is put over it, and pressd down with a heavy weight. After standing some time in this state, it begins to ferment; and it is not till the fermentation has entirely subsided, that the head is fitted to it, and the barrel is finally shut up, and preferred for use. There is not a drop of vinegar employed in this preparation. The Germans write this preparation in the following manner: Sau ter, kraut, or fauer kohl, that is, in their language, four labr, or four cabbage. See Brassica.

CROUTILLE, in Geography, a town of France, in the department of the Vienne, and district of Poitiers; 14 leagues S.W. of Poitiers.

CROY, in Latin Crocatum, a small town of France, in the department of Seine and Marne, near La Ferté-Milon, 12 miles N.E. of Mecaux.

CROZIULLE, a small town of France, in the department of the Upper Vienne; nine miles S.E. of Limoges.

CROW, in Agriculture, the name of an iron bar, which is constricted with a claw at one end, and a sharp tapering point at the other, by which it means is capable of being employed as a lever, as well as a tool for forming holes in the ground for the reception of stakes, triangulons, &c. in making hedge fences.

Croup, Cornix, in Ornithology. See Corvus. Virgil says that the croaking of the crow foreboded rain: "Tum cornix plenus pluviam vocat improba vocem." And
And it was thought to be a bird of bad omen, when seen on the left hand:

"Sax pe finithra cava pradixit ab illice cornix."

England formerly abounded with crows: and in the reign of Henry VIII. an act was passed for their destruction. The crow is a bird which is partly injurious and partly beneficial to the farmer. See ROOK.

Crow, in Mechanics, an iron lever, furnished with a sharp point at one end, and two claws at the other. It has various uses, in heaving or purchasing great weights.

The name *crow*, or *raven*, *corvus*, was anciently given to several machines of war, used in the defence of places: one invented by Diades; another by the Tyrians, mentioned by Q. Curtius; another by Cu. Qvillius. Vitruvius calls the first the demolishing *crow*, *corvus demolitor*, and also *depredator*: others call it the *crane*, *grus*. Polibius describes another invented by C. Duillius used against the Carthaginian fleet. They were all a kind of grappling-hooks, serving to drag things towards the engineer. That described by Q. Curtius was thrown out of a balista. See *CORBEAU* and *CORVUS*.

Crow-bar, a name often provincially applied to an iron crow or lever. See CROW.

Crow-berry, in Botany. See EMPETRUM nigrum.

Crow's-bill, an instrument used by surgeons, in their operations; especially for drawing bullets and other foreign bodies out of wounds. It has its name from its figure.

Crow creek, in Geography, a creek of America, which falls into the Tennesse, from the north-west, opposite the Crow town, 15 miles below Nickajack town.

Crow's-feet, in the Military Art. See CALTROP.

Crow's-feet, in a Ship, are small ropes, or lines, sometimes six, eight, or ten, reeved through the dead man's eye. They are used to furl up the awnings; or to keep the topsails from fretting against the edges of the tops.

Crow foot, in Botany. See RANUNCULUS.

Crow-foot-Crane's-bill, in Agriculture, the common name of a plant of the perennial weed kind, (*Geranium pratense*), which is frequent in moil meadows and pastures. It has the flake or item, from two to three feet in height, of a reddish tinge, and forked or divided into two branches. The leaves are much divided, and the flowers large, flat, and of a blue colour. It has the denomination of crane's-bill probably from the bill-like form of the seed vessel.

Crow foot, a name given to different plants which are met with in meadows, fields, and pastures, by farmers, as the common pilewort (*ranunculus ficaria*); the lesser spearwort (*ranunculus flammula*); the narrow leaved crow-foot (*ranunculus reptans*); the round or celery-leaved crow-foot (*ranunculus sceleratus*); the butter flower or butter-cups (*ranunculus acris*); the small-flowered crow-foot (*ranunculus parviflorus*); the gold-cup or bulbous crow-foot (*ranunculus bulbiflorus*); the creeping crow-foot (*ranunculus repens*); and the corn crow-foot (*ranunculus auricomus*). The latter, according to the author of the Gloucestershire Report, has the roots knotty, rising little above the ground, and blooming early in the spring, being principally found in such meadows as are rather moist, and eaten only by sheep. Withering remarks that the young leaves of this species may be eaten in the vernal months with other pot-herbs. It is affected that goats and sheep eat it; while cows and horses reject it. Also, that the *curculio dasalus* is found upon it.

The second species is an inhabitant of meadows of the boggy kind, and the borders of small rivers. It is a plant which is extremely acrid in its quality, so as when applied externally to inflame and blister the skin. The water distilled from it produces the most speedy vomiting, even more so than white vitriol, so as to be a proper remedy in cases of poison. According to Withering, horses eat it; while cows, sheep, goats, and swine refuse it.

The third fort is found on the rocky borders of some extensive plates of water, and sometimes in fields somewhat inclined to moisture.

The fourth species is likewise found in watery situations. Every part of it is of a corrosive quality. It is eaten by goats; but cows, horses, and sheep refuse it, according to the author of the "Sylleptic Arrangement of British Plants."

The fifth kind is very commonly met with in meadows and meadow lands. It is also very acrid, readily producing vexations on the skin. *Linumus* leaves that sheep and goats eat it; but that cows, hares, and swine reject it; the two former leaving it untouched even under the most bare flake of the pasture, in the opinion of Withering.

The sixth species is common both in meadows and corn fields, where the foil is of the gravity kind. In the latter it is sometimes very troublesome.

The seventh fort is very common in meadows and pastures: and,

The eighth kind is found in these places, as well as in garden grounds where the situation is moist.

It is remarked by Mr. Pitt, in an excellent paper in the fifth volume of "Communications to the Board of Agriculture," that these two last, with the fifth fort, are all common in the meadows and pastures in every part of the island that he is acquainted, so much so as to give a yellow tinge to the whole surface in the month of June; very abundant in the hay grounds about London, and indeed everywhere else: these plants are so prevalent in our meadows and pastures, and their good qualities have been so often questioned, that it seems highly proper that their effects should be precisely ascertained." And that these three different species are all occasionally found wild with double flowers. In this state we frequently see the *buttercup* and *acris* cultivated in the flower garden, especially the latter; but we should, says the above writer, derive more satisfaction from informing the farmer how he might effectually root them out of his pastures, than how he might cultivate them successfully in his garden, for they propagate themselves with great facility, and occupy a considerable space in good meadows. He is however disposed to think more favourably of these plants; for he has never known a practical farmer mention them as the least injurious; and it is certain of the *repens*, that cattle eat the foliage greedily with other herbage, and that if they refuse the other forts in bare pastures, it is probably because they have been deprived of most of their foliage with the adjoining herbage, and the remaining part of the plant is too acrid to be eaten alone; and indeed cattle refuse the flowering stems even of grasses, when deprived of their leaves: these plants may therefore, it is supposed, be considered as feeders and correctors, being Useful to ues in the animal economy similar to that of salt, mustard, pepper, and vinegar in our tables, to correct the flatulent or purgative qualities of the more palatable and luxuriant dishes of the great table of nature; and though not eaten alone, are an agreeable and useful aliment with other more simple food. If these plants have anynoxious qualities, they have, he conceives, hitherto escaped the notice of farmers, all of whom could not be duped, with any sort of reason, devoid of proper and necessary attention.

Mr.
Mr. Rudge, in his "Survey of the Agriculture of Gloucestershire," however, considers them, esp. the creeping fort, as wildfowl weeds, having little to recommend them to notice but their gaudy appearance. And further, that the acris, bulbifus and repens, are acid and biting to the taste, and therefore rejected by cattle nearly alike, though it is asserted that the leaf is more mild and palatable to some cattle; he, however, suspends that cattle eat it rather from necessity than choice, as it is creeping and spreading along the surface, it becomes so matted with the herbage that it must in some measure be taken up with it. It is added, that the stems or flaks of the two other species are left standing when the ground is quite bare around them; yet that, when made with the hay, their punget quality is said to be lost, and the brightnes of the blossoms in the rick is a good sign of the crop having been well harveseted.

The last species is a common weed in corn fields, and it has been asserted that in Italy, cows, horses, and sheep, eat it with greedines, though it is so acid as to prove poisonous to the latter. A dog is said to have been killed by three ounces of the juice in four minutes. And it is suggested that its being almost solely confined to tillage lands, where cattle are excluded, is probably the reason why milk-chief has not been met with from it here.

Crow-stone. See Allium vincetoxicum.

Crow-gold, in Mineralogy, is the name in Bedfordshire, and some other districts bordering on the chalk flata, for the hematites or radiated nodules of golden pyrites, which are found in the beds of chalk: when exposed to the air in the face of a chalk-pit, or on the surface, crow-golds soon decompose and turn to an ochry dirt, which ultimately falls out and leaves a flamed hole in the chalk. The Tottenhoe or fire-flate beneath the chalk, is apt to contain these decomposing nodules, which very much disfigure buildings where such are used.

Crow Head, a cape of the county of Cork, Ireland, forming the N. western extremity of Bantry bay. Long. 10\(^{0}\) 2' W. Greenwich. Lat. 51\(^{\circ}\) 32' N.

Crow's Meadow, a river of America, in the north-west territory, which runs north-westward into Illinois river, opposite to which are fine meadows. Its mouth is 20 miles wide, and 240 miles from the Mississipi. It is navigable between 15 and 18 miles.

Crow-net, in Rural Economy, the name of an invention for catching and securing various kinds of wild-fowl in the winter-faion, and which is capable of being made ufe of in the day-time. It is constructed of good strong double thread or packthread of a fine kind; the meshes should be two inches wide, the length about ten yards, and the depth three; it must be verged on the side with good strong cord, and stretched out very fluff; on long poles prepared for that purpose. When you come to the place where you would spread the net, open it, and lay it out at its full length and breadth; then fallen the lower end of the net all along the ground, fo as only to move it up and down; the upper end of the net must stand extended on the long cord; the further end being flared or tied to the earth by a strong cord, about five yards distant from the net. Place this cord in an even line with the lower edge of the net. The other end must be at least twenty-five yards distant, to reach into some natural or artificial shelter, by the means of which you may lie concealed from the fowl, otherwise no good success can be expected. The net must be placed in such exact order, that it may give way to play on the fowl on the leaf pull of the cord, which must be done smartly, left the fowl should prove too quick for you. This net may also be ufed for pigeons, crows, or other birds on corn fields newly sown; as also on flubbled fields, provided the flumble conceals the net from the birds.

In this laft intention, it may often be found of considerable advantage to the farmer, in preventing the feed from being too much devoured by their voracious birds.

Crow, orfare, in Ornithology, a species of the Larus; which fee.

Crow-flakes, in Agriculture, a name given to a part of a plough, signifying two upright pieces standing perpendicular, inserted into the box of the plough, near the wheels, and each pierced with two rows of holes; by means of which they support a transverse piece, called the pillow of the plough, running across them, and serving to raise or sink the beam, by being pinned higher or lower, according as the ground is to be ploughed deeper or shallower. See Plough.

Crow-flone, in Mineralogy, is the name of a fine-grained whitish, lustrous flone, found under the third coal-flata, reckoning from the mineral or mountain lime-flone upwards, much used in the neighbourhood of Swanwick, Shirlford, Stratton, Wingerworth, Brampton, Dronfield, and other places in Derbyshire, and in other districts on the western border of the great run of coals, for the repair of the roads. Crow-flone has attracted the notice of mod. English naturalists, from the numerous and large vegetable imprefions which it contains, one in particular of two to four inches or more in diameter, and several feet in length, something like a kind of reed, only that a pith or middle part of the plant is visible; but the same feldom occupies the centre of the trunk, but is sometimes seen close to, and even on the outside of the stem, the surface of which is fluid over with small holes, from the bottom of which small papilI arife. One of thefe curious extra?onsos foflils has been figured by Mr. Parkinson, Organic Remains, Plate III. fig. 1; who ju?ly concludes (p. 436), the fame to belong to the folidia incognita; and we are satisfied, that a further and more minute fearch into the carboniferous flata, will place all the vegetable remains that are imbedded therein, among the fame numerous fials of organized fubfances. See our articles Coal and Colliery.

Crow-flone, in Natural History, is a name in fome places of the anomia gryphus of Linnæus, and perhaps of other species of fossil shells. Mr. Wallcott, in his "Petrefiations found near Bath," has figured one of these (fig. 34.), found in the quarries of free-flone near Bath: similar shells, but probably of different species, occur in great numbers in other flata. The Clunich clay flatum (see Clunich), produces plenty of crown-flones; these in some parts are found in the gravel-pits and on ploughed lands,ingle, and somewhat rounded, and thefe the ignorant and superlitions of fome places denominate the devil's toe-nails! Scotchmen of the fame fials in the Hebrides, according to Pennant (p. 323.), wear thefe shells about them as an amulet, for curing the pains in the joints.

Crow Vaughing, in Geography, a cape of Scotland, on the north-west of the island of Ronaldshay.

CROWSBOROUGH STATION, in the parish of that name, in Sussex, is situated on the ridge of very dialloected and elevated flata, mentioned under Coal, as extending from near Hastings to near Guildford; which, notwithstanding its present great elevation, is upon a flatum many hundred feet below that of the chalk flata; which, with thefe of the whole district called the wealds of Sussex and Kent, and a similar part of Surrey, seem to owe their exposure on their surface to an enormous abraion or denudation of this district when elevated, as it must have been, before the removal of all the upper flata in the British series. See Denu-
Kudination and Elevation of Flora. This flat is about 620 feet south of the site of the old Davenham, and was occupied by the trigonometrical surveyors in the year 1782. Its situation was determined by an observation from Botley hill, distant 90,492.5 feet, and bearing 23° 49° 39'. N.W. from the parallel to the meridian of Greenwich, and another from Leith hill, distant 128.332 feet; whence is deduced its latitude, 51° 3' 9.4 N. and its longitude, 0° 6' 45.5, and 56.5° E. of Greenwich. This flat was used by Botley hill for fixing the plane of Bellbeach, Crowborough chapel, East Grinstead, Fairdeal, Godstone, Mayfield, Rotterfield, and Tattenfield; with Brightling station for Dallington, Nutham, and Homechuch; with Ditching station for Brightling church. Chittingly, Ditching church. Firle, Newn, Little Hordfield, Plumpton, Spittal, and Walcorton churches; with Fairlight station for Willington, and with Leith hill station for Hitching-station, and for Hoatley church. From Leith hill station the ground at Crowborough station appeared depressed in an angle of 13° 45'; at Brightling station it gave an elevation of 3° 54'; and at Crowborough station, Leith hill appeared depressed 4° 55', Botley hill 3° 55', and Brightling windmill 12° 21'; whence was deduced the height of the ground at this station above the level of the sea, 56 feet; the calculated mean refraction with Leith hill being 1.5th of the contained area, and with Brightling 2.21th. (See Phil. Trans. 1795, p. 583.) The situation of the Old Beacon on Crowborough hill had been determined in 1788, by an observation from Botley hill, distant 88.6975 feet, and another from Frant steeple, distant 39.9449 feet; and its elevation and command viewing the coast of France, induced general Roy to point this out (Phil. Trans. 1790, p. 266.), as a proper spot for an English aeronaut, with a well regulated clock and instruments, to be stationed, for making corresponding observations, with a French aeronaut, stationed 150 miles, or more distant, on the Chalk hill, near Helfaut in France, on the instantaneous explosions of lights to be repeatedly fired, near Folkestone turnpike in England, and at Montlimbert or Pienne windmill in France, for the purpose of determining the difference of longitude of these English and French observatories, as a check on that deduced from angular measurements, or the Convergency of Meridians; which fee.

CROWD, in Agriculture, a term frequently used provincially to signify the whealing any thing in a barrow. Thus "to crowd," implies to wheel in a barrow.

CROWD, 2, in Sea Language, is to carry an extraordinary force of sail on a ship, in order to accelerate her course on some important occasion.

CROWDING-BARROW, a name sometimes applied to a wheel-barrow.

CROWEA, in Botany, a genus of New Holland plants, (named in honour of James Crowe, esq. F. L. S., of Lakenham, near Norwich, who died Jan. 26, 1838.) from the testimony of Mr. Bignall, this gentleman was extremely well versed in the botany of Britain, more especially in the genus Salix, to which he had paid particular attention, having collected and cultivated all the species he could possibly procure. Many of his remarks have appeared in Dr. Smith's Flora Britannica, and English Botany, tending to the economical as well as botanical illustration of this difficult and important genus, of which about four times more British species are now known than have appeared in any preceding writer upon them. The specific name of the original species, Crowea Saligna, alludes to Mr. Crowe's merit in this department. His botanical knowledge was applied no less happily to agricultural purposes on many occasions, and he excelled also in the study of Moths, Lichens, and Fungi. SM. Tr. of Linn. Soc. v. 4. 222. Clas and order, decaandra monogynia. Nat. Ord. Rhiinae, hurt. Vent.

Gen. Ch. Call. of 5 leaves, cohering by their tapering bases round a flake which elevates the reflex of the flower, according to M. Ventenat's remark. Gen. Petals 5, regular, equal, ovate, spreading. Stamens 10, about half as long as the petals, awl-shaped, flat, fringed with dense hairs, by which they are united together, by their lower half, into a tube; 5 alternate ones are rather shorter than the rest; anthers oblong about the middle of each filament, on the inside, oblong, of 2 cells, bursling longitudinally, and distitute of any erect gland, or appendage. Tyl. German of 5 lobes, smooth, somewhat depreased; style central, from the base of the germ: stigma capitata. Peric. Capsules 5, connected by their base, oval, slightly compressed, enroosus of 2 valves, enclosing an elatic, carthaginous, bivalve arillus. Seeds solitary, kidney-shaped, brown.

Eff Ch. Calyx of 5 leaves. Petals 5, fesile. Stamina flat, awl-shaped, connected by entangled hairs. Anthers fixed longitudinally to the inside of each filament. Style from the base of the gernae. Capsules 5, combined. Seeds enclosed in an arillus. M. Ventenat, who first detected the singular structure and infertion of the base of the calyx-leaves, wishes to found the generic character on that circumstance, but the analogy of this natural order proves the athers to afford the most essential difference. See C. CROWEA, which belongs to the same order; also BORONIA, SM. TRAILS ON NAT. HILL. t. 4—7.

Sp. 1. C. fesigna. Willow-leaved Crowea. Andr. Repor. t. 79. Tent. Jard. de la Molinafion, t. 7. Leaves lanceolate, entire. Angles of the branches smooth. This beautiful shrub is about 3 feet high, branched; the branches angular, leafy, smooth. Leaves alternate, fesile, lanceolate, entire, tipped with a small point, smooth on both files, and marked with a longitudinal rib. Stipules none. Flowers axillary, solitary, on short simple smooth flacks, with two or three minute bracts. Their colour is a fine pink, and the woolly tips of the flaments form an elegant pale tuft in the centre. A native of New South Wales, near Port Jackson, from whence it was first fent by John White, M.D. It thrives in a greenhouse, in light peat earth, flowering in autumn, but is rather tender, and will not bear much wet. The whole plant is aromatic when bruised, but less strongly scented than many of its natural order. It is propagated either by seeds or cuttings.

2. C. engulifolia. Narrow-leaved Crowea. Leaves linear, minutely toothed. Angles of the branches rough. More slender than the hali, and distinguished by the rough or dentilicated angles of the branches. Leaves very narrow, linear, obtuse, most distinctly toothed towards their extremity, pale-coloured beneath. Flowers about half the size of the foregoing, with the extremities of their flaments paler, and leaf woolly. Style hairy, about as long as the flaments. Found by Mr. Menzies, near King George's Sound, on the west coast of New Holland. It is as yet a stranger to our gardens.

It must be observed that the specific characters of C. fesigna to be seen in the writers above quoted, were made without any knowledge of this second species. Such characters can by accident only have any meaning, a specific difference for a solitary species being evidently a most glaring absurdity. S.

CROWLAND, or CROYLAND. In Geography, an ancient town in Lincolnshire, England, is situated on an island, in a great fen, or level, watered by the Welland, the Wafhe, the
the Nyne, and the Shire drain. The wet soil of the neighbour-
hood formerly rendered the town almost inaccessible, and for a
long time the only approach was on the N.E. side.
Such were the difficulties and delays attending the passage of
this dangerous road, that it produced the edage of "All
the carts that come to Crowland are tied with silver."
The inhabitants have since made a good causeway, a turn-
pike road, and numerous drains, which have converted many
of their tens into corn fields, and greatly improved the state
of the air. The houses of the three streets are built on piles,
the water courses that separate them are adorned on each
side by willows, and the communication is preferred by a
most singular triangular bridge, the three sides of which, after
an ascent too steep for carriages, meet, and form a curious
pointed arch. Carriages, &c. pass under this bridge, where the
Nyne, Welland, and Cattewater join, and form one stream,
flowing hence through Spalding to the sea. This half use-
less structure stands on the site of one mentioned in a charter
granted by king Edred to the monks of Crowland, in 935;
the date of the present bridge is not noticed by historians,
but the outline is a convincing proof that the original bridge
has for a long time perished; on the angle which communicates
with the London road, is a statue said to be of Ethelbald
king of Mercia, in a crown fleury, and with a globe in his
right hand. Ethelbald is said to have founded the magnifi-
cent abbey at Crowland about the year 716, in consequence of
a vow made before he ascended the throne. It was
dedicated to the Virgin Mary, St. Bartholomew, and Guth-
lake, his confessor, and endowed with the island of Crowland,
released for ever from all secular payments; the charter
granted to the abbots and brethren on this occasion, was
exhibited to the Society of Antiquaries in 1734, by Robert
Hunter, esq. then possessor of the site of the monastery.
The Danes burnt the abbey in 870, and the monks were
reduced by misfortunes to five, in 911, when Turkety, bro-
thor to Edred, and chancellor in the reign of king Edmund,
refored them to their primitive state, and Edred rebuilt the
abbey in 948. A second conflagration, which occurred during
the abbacy of Ingulfus, in the year 1091, deprived
the monks of 700 volumes, containing the most valuable
literature of the preceding time; after this event the mons-
tary gradually recovered from its disasters, and flourished
with great splendour till the dissolution, when the revenues
amounted to 1083. 152. 10d.
The inhabitants of Crowland
paid a considerable sum annually to the abbots for the right
of fishing in their neighbourhood; but their principal
profits have for a very long time originated from their in-
ferior dexterity in decoying, and taking wild ducks in ato-
nishing numbers. (See Duck.) The ruins of the abbey
are extremely interesting at present; they are richly adorned
with sculpture; the foundations rest on piles, and some part
of the remains is fitted up as the parish church. Crowland
has a small weekly market on Saturday, and is 93 miles north
CROWLE, a town of England, in the county of Lin-
coln, with a weekly market on Saturday; 36 miles N. of
Lincoln, and 169 N. of London.
CROWN, Corona, a mark of regal dignity; being an
ornament worn on the head by kings and sovereigns, as a
symbol of their authority.
Gallet derives the word corona, whence crown, from the
Latin cornu, horn; because the ancient crowns were pointed
in manner of horns; which were, as we shall see, both by Jews
and Gentiles, esteemed as marks of power, strength, author-
ity, and empire. Hence, in the holy scripture, horns are
used for the regal dignity; and accordingly horn and crown,
in the Hebrew, are expreased by the same word.
In the remote antiquity, the crown was only given to
gods. Plato says, that Bacchus was the first who used it.
Plutarch, cited by Tertullian, De Corona, says Saturn,
Didomirus attributes it to Jupiter after his victory over the
Titans. Q. Fabius Pictor attributes the invention to Jun-
us, adding, that it was a presentment he used in sacrificin;
Leo the Egyptian says, it was Isis who first wore a crown;
and that it consisted of ears of corn, the gift whereof the first
kings

The first crowns were no more than a bandelet, or head-
band, drawn round the head, and tied behind, as we still see
it represented on medals, around the heads of Jupiter, the
Ptolemies, and the kings of Syria.

Afterwards they consisted of two bandelets; by degrees
they took the form of branches of trees of divers kinds; at length they
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The woods and groves were searched, to find different
crowns for the several deities; thus on medals, we find Ju-
piter's crown of flowers, more frequently of laurel; Juno's
of the vine; that of Bacchus, the vine with grapes, vine-
leaves, and branches of ivy, with flowers and berries; those
of Castor, Pollux, and the river-gods, of bulrushes; that of
Apollo, sometimes of laurel, sometimes of rushes; that of
Saturn, new figs; that of Hercules, poplar; that of Pan,
pine or alder; that of Lucina, dittany; that of Horus, the
fruits proper to each season; that of the Graces, olive-
branches, as well as that of Minerva; that of Venus, roses;
of Ceres, ears of corn, as well as that of Isis; that of the
Lares, myrtle or rosemary, &c.

Crowns were not only used on the statues and images of
the gods, by the priests in sacrificing, and by kings and em-
pers, but also on altars, temples, doorways of houses, faceted
vessels, victims, ships, &c.

The apomtiths crowned those who were victors in the fol-
en games, warriors, &c.

Among the Romans there were various kinds of crowns,
distributed as rewards of military achievements. The coal
by crown was the first, made of myrtles, and was bestowed
on generals who had been victorious over slaves, or enemies un-
worthy of the Roman valor, and who were entitled to the
honours of the lesser triumph, called ovation.

The second was the naval or spartal crown, consisting of a
circle of gold richly chased; having on the edge four masts
of ships, and as many heads of ships placed alternately;
given to the captain who first grappled, or the soldier who
first jumped aboard an enemy's ship.

Tempora navalis fulgentis rostrata corona.

Crown crowns, &c. v. 684.

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and that it consisted of ears of corn, the gift whereof the first
knight men.

In this most authors agree, that the crown originally was
rather a religious than a civil ornament; rather one of the
pontificalia, than the regalia; that it only became common
to kings, as the ancient kings were priests as well as princes;
and that the present princes are entitled to it, in their eccle-
siastical capacity rather than their temporal. See King,
&c.

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given to the captain who first grappled, or the soldier who
first jumped aboard an enemy's ship.

—Cul bellu imigit superbum
Tempora navalis fulgentis rostrata corona.
CROWN.

Dented or embattled, thus bearing some allusion to the figure of a wall; given to him who first mounted the wall of a place besieged, and there lodged a standard; this crown we also find given, on medals, to the particular genii and guardians of provinces and places.

The fifth, the civile crown, made of a branch of green oak; given to him who had saved the life of a citizen in a battle or assault. This was conferred on Cicero for detecting Catiline's conspiracy, and afterwards on Augustus Cesar himself.

This was reckoned more honourable than any other crown, though composed of no better materials than oaken boughs. Virgil (AEn. vi. v. 77.) calls it " civile quercus:"

"Atque umbrata gerunt civile temporae quercus."

Plutarch (in Coriolan.) suggests, the reason why the branches of this tree should be made use of in preference to all others. For the oaken wreath, says he, being otherwise sacred to Jupiter, the great guardian of their city, the Romans might, therefore, think it the most proper ornament for him who had preserved a citizen. Besides, the oak may well claim the preference in this case, because, in the primitive times, that tree alone was thought almost sufficient for the preservation of a man's life; its acorns were the principal diet of mankind in the more early ages, and the honey, which was commonly found there, preferred them with a very pLEasant liquor. It was a particular honour conferred on the persons who had merited this crown, that, when they came to any of the public shows, the whole company, as well senate as people, should signify their respect, by rising up when they saw them enter; and that on those occasions they should take their seats among the senators, being also excused from all troublesome duties and services, in their own persons, and procuring the same immunity for their father, and grandfather by his side. (Plin. l. xvi. c. 4.)

The sixth was the triumphal crown, made of branches of laurel, or bay-tree, given to a general who had gained a battle, or conquered a province, and who was worthy of the honour of a triumph. This was afterwards made of gold, and not restrained only to those who actually triumphed, but presented on several other accounts, as commonly by the foreign states and princes to their patrons and benefactors.

Firstly, the corona oblatae, or graminea, made of grass or herbs found on the ground in the place besieged; given by common consent of the soldiers to generals who had delivered a Roman army besieged by the enemy, and obliged him to decamp. Beside these, we meet with the corona aurata, often bestowed on soldiers without any other additional term. Dion Cassius mentions a particular fort of coronet made of olive-leaves, and belted, like the red, in consideration of some signal act of valour. Llinus is of opinion that these succeeded the golden crowns when the latter were laid aside.

The eighth was also a crown of laurel, given by the Greeks to their athletes; and by the Romans to those who had negociated, or confirmed a peace with an enemy; this was the last elumined. Besides these, in antiquity, we meet with radiant crowns, given to princes at their translation among the gods, whether before or after their death. Cæsuphon says, this fort of crown was peculiar to deities; yet it is certain Cæsar took it in his lifetime.

Athletic crowns were defined to crown victors at the public games.

Of these the Olympic chaplet, or crown, composed of the branches of a wild olive, and conferred on the conquerors in the Olympic games, merits particular notice. In order to enhance the value of these olive chaplets, and to render them in some degree worthy of these games, which by way of eminence were styled holy, the Eleans pretended that the tree, from which they were always taken, was originally brought to Olympia by Hercules, from the country of the Hyperboreans; a people, whose situation no geographer, ancient or modern, has yet been able to determine. Pindar ascribes the honour of this exploit to Hercules, the fon of Alcmena, though others, as Panaties informs us, gave it to the Iean Hercules, who was earlier by some generations. The Eleans further pretended that this particular tree was selected and indicated to them, among many others of the same kind, by the Delphic oracle. For this purpose, as the fact is related in a fragment of Pdaleon, they sent Iphitus, their king, after he had restored these games (for during the first five Olympiads, as this writer says, no one was crowned) to Delphi, to whom the god gave this answer, as we have it in Well's Difertation:

"To the swift victor be no more assign'd The blesting offspring of the fercy kind. But from the olive, which spontaneous grows In Pila's vale, a verdant crown compose; That olive, round whose venerable head Her fable textures hath Archilochus traced."

Iphitus, upon his return to Olympia, having discovered, among the many wild olives that grew in the sacred grove, one which was covered with cob-web, enclosed it with a wall; and from this tree, in this chaplet or crown taken, and given to the conquerors. The first who was crowned was Daeles of Melfene, who, in the seventh Olympiad, gained the victory in the stadion, orimple foot-race.

From this account we also learn, that the prize originally bestowed upon the Olympic conquerors was a lamb. Some have fuggled, but erroneously, in Mr. Well's opinion, that in some periods of these games, the crowns given to the victors were of gold. The Eleans, it is conjectured, substituted the cheaper one of an olive crown; and in order to fandon this change, and to give a titre to their olive chaplet, they had recourse to fables, and to the authority of a Delphic oracle. With the same view they not only encompassed this sacred olive with a wall, and distinguished it by the name of "Calilitephanoi," i.e. the tree of the crowns of glory; but put it also under the protection of certain nymphs or inferior deities, whom from their office they called "Calilitephani," and to whom they erected an altar near that consecrated plant. These crowns, for the purpose of exciting the emulation of competitors, were placed in their view, upon a tripod, or table, which, during the games, was placed in the middle of the stadion, or of the hippodrome, as the respective exercises required. In the interval of the games, they were kept, the former in the temple of Jupiter, the latter in the temple of Juno, at Olympia. The tripod was of brass, and fecom to have been entirely laid aside after the table was made, which was composed of gold and ivory, the workmanship of Colotes of Paphos, a disciple of Paiteles. Branches of palm were exhibited on the same table, and conferred on the victors, with the crowns; these palm branches they carried in their hands, as emblems, says Plutarch, of the unsuppressor vigour of their minds and bodies, manifested in gaining the victory over their antagonists. The conquerors were summoned by proclamation to receive these tokens of victory: and accordingly they marched in order to the tribunal of the Hellanodics, where a herald, taking the crown of olive from the table, placed one upon the head of each of the conquerors; and giving into their hands branches of palm, led them in that equipment along the stadion, preceded by trumpets, proclaiming at the same time with a loud voice, their names, the name of their fathers, and their countries.
tries; and specifying the particular exercise in which each of them had gained the victory. Mr. Welb conjectures,
that although the Olympic crowns were all composed of the branches of the sacred olive, they were distinguished from each other, either by the difference of their form, or the addition of some emblematic ornament peculiar to the several exercises. The racer's crown was different from the wrestler's, and so of all the rest. This conjecture, he conceives, is countenanced by a passage of Plutarch (De Tranquil. Animi), who seems to distinguish between these two last-mentioned crowns. This ingenious writer further ingeniously, that, besides the chaplet peculiar to the games, the conquerors in general received another composed of wings or plumes. That different degrees of merit were rewarded with different degrees of honour, and consequently with different crowns, Mr. Welb infers from the words of St. Basil (Ap. Fab. Agon. I. iii. c. 1). "No prudent of the game," says he, "is so devoid of judgment, as to think a man, who, for want of an adversary, hath not contended, deserves the fame crown (τὸν φόραμα) as one, who hath contended and overcome." Although he received a crown, yet it was different from that which he would have received if he had contended and vanquished. Before the victors at the Olympic games were put in possession of their crowns, they were saluted by the acclamations and applauses of the numerous assemblage; by the warm congratulations of their friends, and even the faint and extorted greetings of their maligners and opposers. As they passed along the stadium, after having received their crowns from the Hellenodices, they were again saluted with the acclamations of the spectators, accompanied with a flower of herbs and flowers, poured on them from every side. It was also customary for the friends of the conquerors to express their particular respect to them, by accosting them and presenting them with chaplets of herbs, &c. binding their heads with fillets, ribbons, &c. Welb's Dissertation on the Olympic Games. See Olympic Games.

The custom of crowning persons who had distinguished themselves in poetry and music, which was almost as ancient as the arts themselves, subsisted till the reign of Theodorus, when the Capitoline games, being regarded as remnants of Pagan superstitition, were utterly abolished. About the time of Petrarch, however, poetry recovered its ancient influence and importance, or was involved with its former prerogatives. In the year 1340, Petrarch had the honour of receiving on the same day two letters, one from the senate of Rome and another from the university of Paris, inviting him to accept the laurel crown; and in the following year he was magnificently crowned at Rome. "The crown," said the senator who placed it on his head, "is the med of virtue." Being conducted in great pomp, after the ceremony, to the church of St. Peter, he returned thanks to God for the honour that had been bestowed upon him, and then laid down his crown, that it might be placed among the offerings that were suspended to the roof of the temple. See Petrarch and Laureate.

From some passages in Eusebius Caesariensis, some authors conclude, that bishops had likewise anciently their crowns.

The Roman emperors had four kinds of crowns. Still seen on medals, viz. a crown of laurel, a radiating crown, a crown adorned with pearls and precious stones, and the fourth a kind of bonnet, or cap, something like the morier. The first was ordinarily that used from the time of Julius Cæsar: the right of bearing it was granted him by the senate; some say on account of his baldness; and afterwards continued to his successors. Julianus was the first who took that of the bonnet kind.

The papal crown is composed of a cap or tiara, enclosed by three marquises coronets, having two pendants, like the bishops' mitres; and on its top a mound of gold; these three crowns represent the pretended triple capacity of the pope, viz. as high-priest, supreme judge, and sole legislator of the Chrisilians.

Royal crowns were anciently open, but are now more or less closed at their tops with arches, and are called "imperial crowns."

The imperial crown is a bonnet or tiara, voided at the top like a crescent, with a circle of gold, adorned with precious stones and pearls, heightened with fleurs-de-lis, supporting a globe, with a crofs at the top.

The English crown is adorned with four crofles, in the manner of the old of Malta; between which are fleurs-de-lis. It is covered with four diadems, which meet at a little globe supporting a crofs.

According to Selden, the kings of the Saxon race in England had a crown, like that of other nations, which at that time was only a plain fillet of gold; but king Egebert flirted fixed on the circle or fillet, with points or rays, resembling the crown worn by the emperors of the East; and king Edward, furnamed Ironside, topped the points with pearl. William the Conqueror is said to have had his circle flowery; but Sandford says, the coronet had on the circle points and leaves, the points being much higher then the leaves, and each of them topped with three pearls, and the cap or tiara topped with a crofs patté, as appears on the tail of that monarch. The crown worn by his son, William Rufus, was only enriched with points, pearl'd at their tops, and not accompanied with flowers. The crown of Henry I. is adorned with fleurs-de-lis only, a little raised, as is seen on his great seal and coin. Maud, queen of England, had her crown enriched with leaves and points, the leaves or flowers being higher than the points; and their successors to king Edward III. had their crowns variously enriched with points and fleurs-de-lis placed alternately, sometimes the one higher than the other. King Edward III. enriched his crowns with fleurs-de-lis and crofles patté. Edward IV. had a close or arched crown, heightened with fleurs-de-lis and crofles patté, and arched with four bars. Edward V. and Richard III. bore the fame as king Edward IV. Henry VII. and VIII. had their crowns composed of fleurs-de-lis and crofles patté, with two arches, embellished with pearls, &c., and this form has been since continued. The crown of England, with which the kings of England are crowned, is called "St. Edward's Crown," made in imitation of the ancient crown said to be worn by that monarch, kept in the abbey church of Westminster till the beginning of the civil wars in England, when, with the rest of the regalia, it was stolen and sold in 1642. This very rich imperial crown of gold was made against the coronation of Charles II., and is embellished with pearls and precious stones. As diamonds, rubies, emeralds, and sapphires, and has a mound of gold on the top, enriched with a fillet of gold, embellished also with precious stones. Upon the mound is a crofs of gold, embellished with precious stones, and three very large oval pearls, one fixed on the top, and two others pendant at the ends of the crofs. It is composed, as all the imperial crowns of England are, of four crofles patté, and as many fleurs-de-lis of gold, placed on a rim or circlet of gold, all embellished with precious stones. From these crofles arise four circular bars or arches, which meet at the top in form of a crofs; having at their intersec-
CROWN.

The crown of Hungary is the same with that of France, Spain, &c.; but over it is another crown, composed of 16 plates of gold, from which arise two arches, having in their centre a crofs, the ends of which are ornamented with large pearls: the plates are enamelled with busts of Jesus Christ and his apoftles, as is also the flat part of the arches, and enriched with pearls, jewels, and precious stones. A fabulous tradition says, that this crown dropped from heaven, for the crowning of Stephen the first king of Hungary, in the year 1000.

The great Turk bears over his arms a turband, enriched with pearls and diamonds, under two coronets, the first of which is made of pyramidal points, heightened up with large pearls, and the uppermost is surmounted with crescents.

The electoral crown, or coronet, or crown of Charlemagne, is a fevret cap, turned up with ermine, and clofed with a semi-circle of gold, all covered with pearls. On the top of it there is a globe with a crofs thereon. It is borne by his majesty the king of England, on an ecfucheon, in the fourth quarter of the royal achievement, as arch-treafurer of the sacred Roman empi". 

Crowns, or Coronets, of British princes of the blood royal.

1. The crown of the prince of Wales is a circle of gold, set round with four crofes-pattee, and as many fleurs-de-lis alternately; from the two centre crofes-pattee is an arch, adorned with pearls; in the middle of which is a ball and crofs; and within the coronet is a crimson cap, lined with white farfnet, and turned up with ermine. Besides this, the prince of Wales has another distinguishing mark of honour, viz., a plume of three offrich feathers, with an ancient coronet of a prince of Wales, with this motto, Ic dien, i.e. I serve. This device was at first taken by Edward prince of Wales, commonly called the Black Prince, after the battle of Crefhy, A.D. 1346, where, having killed John king of Bohemia, he took from his head fuch a plume, and put it on his own.

2. The coronet of the princes of the blood royal is composed of a circle of gold, richly chafed; on the rim or edge two crofes pattee, two flrawberry leaves, and four fleurs-de-lis: within the coronet is a crimson velvet cap, lined with farfnet, and turned up with ermine; on the top of the cap, a rich taffef of gold and fiangles.

Crowns, or Coronets, of the Britifh nobility.

1. That of a duke is a circle of gold richly chafed; having on the edge eight flrawberry leaves of equal height: a crimson velvet cap, topped by a tiffel of gold, and turned up with ermine of one row.

2. That of a marquis is a circle of gold, fet round with four flrawberry-leaves, and as many pearls, on pyramidal points of equal height, alternately: the cap, &c. as before.

3. An earl’s has eight pyramidal points, with as many large pearls on the tops of them, placed alternately, with as many flrawberry leaves, lower than the pearls: the cap and tiffel as before. Coronets were first affigned to earls in the reign of Henry III.

4. The vifcount has only pearls, without any limited number, placed on the circle itself, all round: cap, &c. as before.

5. A baron has only five pearls, fet at equal distance, on the golden border of ermine; not rafed, to diftinguith him from the earl; and limited, to shew that he is inferior to the vifcount.

The barons originally wore only a crimson cap turned up with
with white fur; but by a grant, dated August 7, in the 15th year of Charles II., they obtained the privilege of wearing coronets according to their respective dignities; and in 1665, king Charles II. granted his royal warrants to the officers of arms in Scotland and Ireland, for the peers of each of these kingdoms to wear the same fashioned coronets with those of England, according to their several degrees. These coronets consist of a circle of gold, with fix pearls only on the rim, a cap, tafflı, &c. No peer or peeress, under the dignity of princes and princesses of the blood royal, ought to have the circle or rim of their coronet enriched with either precious stones or jewels, or embelmified with any pearls, except those mentioned to encompass the coronet of the baron, viscount, earl, and marquis; but this rule is now so little regarded by herald painters, that the coronets on the carriages of many of the peers and peeresses are represented as having their arms embelmified, and ornamented with pearls, precious stones. &c. The balls on the English coronets are commonly called pearls; but they are always made of silver.

The eldest sons of peers, above the degree of a baron, use the coronet appertaining to the father's second title; and none of the younger sons use coronets.

The coronet of the kings of arms is a plain circle of gold, bearing sixteen leaves, eight of which are higher than the others; on the bands are engraved the following words, "Militera Dies." The arms of the archbishops of Canterbury are borne by the present archbishop, as they have likewise been borne by some of his predecessors, timbered with a mitre affronté, encircled by a ducal coronet, and with two labels or pendants fixed to it, hanging waved and folded on each side of the field. As for the coronets belonging to the late titled dignities of France, it is now needless to recount them. See the Plates of coronets and coronets under the title Heraldry.

Ch. Paschal has wrote expressly de Coronis. Baudelot, in his History of Italoemy Aulètus, has a number of curious observations on the same subject, that had escaped Paschal. Du Cange gives us a curious dissertation on coronets; and Schmeessel, a German, a treatise of royal crowns, both ancient and modern.

Crown, in Architecture, denotes the uppermost member of the cornice; called also corona and larmier. Crown, in Astrology, is a name given to two constellations: the one called septentrionalis, and the other meridionalis. See Corona.

Crown of an Arch, among Bricklayers, signifies the top or part denominated the key-stones among stone-masons. See Haunch and Standril.

Crown, in Commerce, is a general name for coins both foreign and dometnic, or of near the value of five shillings sterling.

In its limited sense, crown is only applicable to that popular English coin which bears the name, and which is equivalent to five shillings, or sixty English pence; or to fix livres French money. According to the statute, these consist of 111 parts of silver and 9 of copper in 120, or 1 1/15 the fine, as the assayers term it: the weight is 1/25 of a pound troy = 464.5161 English grains = 0.060139 lb.avoirdupois. But, in its extensive sense, it takes in several other coins; as the French eau, which we call the French crown, struck in 1641 for fifty loks, or three livres; also the patron, dollar, ducatone, rix-dollar, and piastre, or piece of eight.

Crown, in an Ecclesiastical Sense, is used for the clerical tonsure; which is the mark or character of the Romish ecclesiastics.

This is a little circle of hair, shaved off from the crown of the head; more or less broad, according to the quality of the orders received. That of a mere clerk is the smallest; that of priests and monks the largest.

The clerical crown was anciently a round lift of hair, shaved off around the head, representing a real crown; this is easily observable in several ancient statues, &c. The religious of St. Dominic and St. Francis still retain it.

Crown of the Virgin. See Rosary.

Crown, in Geometry, a plane ring included between two parallel or concentric peripheries, of unequal circles; generated by the motion of some part of a right line round a centre, the moving part not being continuous to the centre.

The area of this is had, by multiplying its breadth by the length of a middle periphery, which is a mean proportional between the two peripheries that bound it.

Let D be the middle point of the breadth A B (Plate II. Analysis, fig. 23.); let C D = a, and C A = r. Let the circumference of the outer circle be c, and its area will be \( \frac{c^2}{2} \), and the area of the inner circle will be \( \frac{c^2}{2} - r^2 \), this quantity being a fourth proportional to \( a^2 \), \( a^2 \), and \( \frac{c^2}{2} \):

then the difference of these two areas, or the area of the crown, will be \( \frac{c^2}{2} - r^2 = a - r \times \frac{c}{2} \times \frac{a^2}{a} \). but \( a - r \) is equal to A D, the breadth of the crown, and \( \frac{a^2}{2} \times \frac{a^2}{a} \) is the circumference of the circle, whose radius is CD; because CD is an arithmetic mean between CA and CB, and therefore equal to \( \frac{a^2}{a} \), and the circumferences of circles are as their radii, or \( a + r = \frac{c}{2} \), \( a - r = \frac{a^2}{a} \).

Crown, or Corona, in Heraldry, is used for the representation of that ornament, in the mantling of an armory; to express the dignity of the person who bears it.

The crown here is of more antiquity than the helmet; and it was used as a symbol of victory and triumph. See Crown supra.

Crows, among Jewellers, the upper work of the rose diamond, which all centres in the point at the top, and is bounded by the horizontal ribs.

Crowns, pearled, or flowered, those with pearls, or leaves of smallage, parsley, &c. Such were anciently worn by all crowns, even those of foreign princes; though they were not used in their armours, till about two hundred years ago. See Crown supra.

Crowns, radiated, or pointed, are those of the ancient emperors, which had twelve points; representing, as some will have it, the twelve months of the year.

Crown Royal, Order of, an order of knighthood, which, same pray, was instituted in 802; the knights of which bore a crown embroidered with gold, on a white robe. Others deny the existence of such an order.

Crown of Colours, in Meteorology, certain coloured rings, which, like halos, appear about the body of the sun and moon, but of the colours of the rainbow; and at a less distance than the common halos. These crowned Sir Isaac Newton.
Newton shews to be made by the sun's shining in a fair day, or the moon in a clear night, through a thin cloud of globules of water or hail, all of the same height; and according as these globules are bigger or less, the diameter of the crowns will be larger or smaller; and the more equal these globules to each other, the more crowns of colours will appear; and the colours will be the more lively. See Crorns and Halo.

Crown of the Cable, in Sea Language, denotes the heights which are formed by its several turns.

Crown, in Map., a reel marked by a reversed C, with a point in the middle of it, thus C. Crown, Clerk of the. See Clerk.

Crown, Peak of the. See Peak.

Crown, Officer of the. See Officer.

Crowns, Thundering, in Military Language. These are two, three, or four circles tied together with a thread of wire, round which they float grenades, pistol barrels, charges, &c. They cover the whole with harts of hemp or tow, and combustible materials. Setting fire to these circles, they roll them upon the works of the besiegers. They are also made use of for expelling attempts to mount the breaches, when they are peculiarly called thundering crowns. In other cases, they are commonly called circles of fire.

Crown-Glafs, denotes the finest sort of window-glass. See Glass.

Crown-Grafting. See Grafting.

Crown Imperial, in Botany. See Fritillaria Imperialis.

Crown Imperial, in Gardening. A well-known plant of the flowering kind, of which different species are cultivated in flower-gardens for their great elegance when in bloom; and there are likewise, annually, a great number of varieties produced from the seeds of each of these distinct species, which, when intermixed in the different compartments, afford not only an extremely pleasing but intercelling appearance, to those who are curious in flowers. The modes of culture and management will be described under the proper head. See Fritillaria.

Crown Imperial Shell, in Conchology. See Voluta.

Crown-Office, a court or office under the King's-bench, of which the king's coroner or attorney there is commonly master; is called, because the crown is more immediately concerned in what is therein transacted. See Court of King's-bench.

Crown-Point, a township of North America, the most southerly of Clinton county in the state of New York; so called from the celebrated fortresses which was in it, and which was garrisoned by British troops from the time of its cession by the revolution, till the time of Crown_POINT, a township of North America, the most southerly of Clinton county in the state of New York; so called from the celebrated fortresses which was in it, and which was garrisoned by British troops from the time of its cession by the revolution, till the time of the American revolution. The point upon which it was erected by the French, in 1771, extends towards the north, into Lake Champlain. After it was repaired by the British, it was the most regular and expensive of any constructed by them in America. The adjoining barracks, formed of stone, are capable of containing 4000 troops. It had several outworks; but it is altogether in ruins, the walls of the barracks excepted, and the ditches on the south side, which were wide and deep, cut through immense rocks of limestone, and are still perfect. Before it was given up by the British, the powder magazine blew up, by which accident a great part of the works was destroyed; and since its evacuation, other parts have been demolished and ravaged in searching for bricks, lead, and iron shot. The view from this fort of old buildings overgrown with ivy, of the lakes, and of the distant mountains beyond it, is very fine. The fort, and 700 acres of good cleared land adjoining to it, are the property of the state of New York, and are leased out at the rate of about $30 per acre, which is appropriated for the use of a college. Crown-Point is the most advantageous spot on the shores of Lake Champlain for a military post, as it is not commanded by any rising grounds in the neighbourhood, which is the case with Ticonderoga, the old fort and barracks of which are in ruins; and as the lake is so narrow here, owing to another point running out on the opposite side, that it would be absolutely impossible for a vessel to pass, without being exposed to the fire of the fort. The point opposite to Crown-Point is called Chimney-Point, on which are a few hovels. The township of Crown-Point has no rivers; a few streams, however, issue from the mountains, which serve for mills and common uses. The mountains, which extend along the whole length of lake George, and part of lake Champlain, abound with moose deer, and the other inhabitants of the forest. In 1795, this township contained 208 inhabitants; and by the late census in 1795, it appeared that there are 126 electors. The fortresses lie in N. lat. 43° 20'. W. long. 73° 16'.

Crows, Right of, in British History, denotes the right of succession to the throne in those kingdoms. In this sense the crown, according to judge Blackstone, is by common law, and constitutional custom, hereditary, in a manner peculiar to itself; so that the right of inheritance may from time to time be changed, or limited, by act of parliament. The succession is such, that the next heir of the crown takes possession on the death or demise of the last proprietor; not by any pur d&nle title, but that kind of hereditary right which owes its origin solely to the founders of our constitution. The succession likewise refines that of the heirs to landed estates, under particular exceptions, thus, the crown descends lineally to the issue of the reigning monarch, as from king John to Richard II., and to the first born of the male issue, as in the case of Edward V., who was preferred to Richard his younger brother, and to Elizabeth his elder sister; but on failure of the male line, it descends to the female issue; thus Mary I., succeeded Edward VI., and the line of Margaret queen of Scots, the daughter of King Henry VIII., with the title of queen.
daughter of Henry VIII., inherited on failure of the
defendants of Henry VIII. Among the females, the crown
defends to the eldest daughter and her issue, and not, like
common inheritances, to all the daughters at once; thus
queen Mary, on her brother’s death, was the sole successor,
though her sister Elizabeth was living. Moreover, the
lineal descendants of any female who had not issued an
issue would have done, if he had been still living. Thus
Richard II. succeeded his grandfather Edward III., in right
of his father the Black Prince, to the exclusion of all his
uncles. On failure of lineal descendants, the crown is vested
in the next collateral relations of the late king, if they are
lineally descended from the blood royal, as in the case of
Henry I. who succeeded to William II. John to Richard I.,
and James I. to Elizabeth, being all derived from the Con-
queror, who was then the only regal flock: nor is there any
exception, as in common descent, to collateral relations of
half-blood. Thus Mary I. inherited after Edward IV.,
and Elizabeth after Mary, though born of Henry VIII. by
different mothers.

However, this hereditary right is by no means indefen-
sible; because the immediate heir has been, and may be,
excluded by the supreme legislative authority of this king-
dom; to which it belongs to defeat this hereditary right,
and by particular enactments, limitations, and provisions,
to exclude the immediate heir, and will the inheritance in any
one else. Under this control, the crown naturally defends
either to the heres natura, if the course of descent is unim-
pitched, or to the heres fides, in consequence of a partic-
ular settlement: because the king never dies, and there can
be no interregnum.

Egbert, in the beginning of the ninth century, was the
sole monarch of this kingdom; poising the throne of the
Welt Saxons by a long and undisturbed descent from his
ancestors of above 500 years; and acquiring the other
kingdoms of the heptarchy, fome by conquest, but most of
them by a voluntary submission. From Egbert, to
the death of Edmund Ironside, through a succession of fifteen
princes, the crown defended regularly, with very little
deviation. In the three succeeding reigns, the succession was
futuristic by force; at length, upon the death of Hardicra-
hunte, the Saxon line was interrupted by Edward the Con-
defier, who instead of was not the next heir, because his brother Ed-
mund Ironside had a son living, then an outlaw in Hung-
ary. On his decess, without issue, Harold II. usurped the
throne, though the right remained in Edgar Atheling, fon
of Edward the outlaw. At this time William the Norman
invaded England, pretending to a right to the crown from
a grant of Edward the Condefier, and his conquest trans-
ferred the succession of the crown to a new family. (See
Conquest.) From the Condefier, as from a new flock, the
race of Saxon kings was dropped for the present, it
defended to his sons William II. and Henry I., the eldest
son Robert being kept out of possession by his brethren.
Henry was succeeded by Stephen of Blois, grandson of
William I. by his daughter Adelasia, his elder brother
Theobald waving his claim, and Matilda or Matilda, the
dughter of Henry I. and the grand daughter of Edward
the outlaw, to whom the succession properly belonged, be-
ing excluded by force. However, her son Henry II., an
heiress to the Condefier, succeeded Stephen, though the
proper heirs in the Saxon line were the sons of Malcolm
king of Scotland, by Margaret, the daughter of Edward
the outlaw. From Henry II. the crown descended to his
eldest son Richard I., and on his death was fefted by his
brother John, the youngest son of Henry, the right being
vested in his nephew Arthur. On the death of Arthur,
and his sister Eleanor, without issue, the crown properly
defended to Henry III. the son of John, and from him,
in an hereditary line of six generations, to Richard II., and
this right of succession was declared in parliament by Ed-
ward III., c. 2. When Richard resigned the crown,
the hereditament had no children, the right reverted to the
issue of his grandfather Edward III. and particularly to the
heir of Lionel, duke of Clarence; but Henry dukes of
Bedford usurped the crown under the title of Henry IV., pret-
tending to be a successor by right line of the blood royal.
Parliament, by Ed. IV., c. 2, settled the inherit-
tance of the crown and kingdom in him and his heirs.
He was regularly succeeded by his son and grandson, Henry
V. and VI. In the fall of these reigns the house of York
began to assert their dormant title, and established it in the
period of Edward IV. At his accession, the dethroning of a
king de jus, and a king de jure, first occurs; and by
Ed. IV., c. 1, the three Henries are styled kings in
doeh, and not of right. This crown was succeeded by his
eleth son Edward V., who was deposed by his unnatural
uncle Richard III., under a pretence of bastardy. During
the tyrannical reign of Richard, Henry VII., earl of
Richmond, assumed the regal dignity, and his position was
established by parliament in the first year of his reign.
He afterwards married Elizabeth of York, the unlated
heir of the Condefier, in whom the right of the crown
was vested. Henry VIII. succeeded by indisputable hered-
itary right, and transmitted the crown to his three
children in succedane order; and Ed. IV., c. 1, provides
for the regular succession in his descendants. This
principle was repealed by 28 Hen. VIII., c. 7., by which Eliz-
abeth and Mary were bafeharged, after the king’s divorce
from Anne Boleyn. They were again recognized, and the
succession restored by 25 Hen. VIII., c. 1. The right
both of Mary and Elizabeth is again expressly recognized
by parliament, after their respective accession; and parliament
explicitly affirms its right of directing the succession of the
crown, by 13 Eliz. c. 1. On the death of queen Eliz-
beth, without issue, so that the line of Henry VIII. be-
came extinct, James VI. of Scotland, and I. of England,
was declared the legal defendant, from the alliance of Margar-
et, eldest daughter of Henry VII. by Elizabeth of York with
James IV. of Scotland; and in him were united not only
the claims of different competitors since the Condefier, but
likewise the right of the Saxon monarchs, because he was
the direct lineal heir of Malcolm, who married Margaret,
grand-daughter of Edmund Ironside. Several instances
have occurred, in this abstrac of the history of the descent
of the crown, in which parliament has interpolated to fix,
direct, and limit the succession; particularly, under Henry
IV. Henry VIII. Henry VII. crowned Mary, and queen
Elizabeth; to which we may also add the Stat. 1 Jac. 1.
c. 1, which recognizes the succession lawfully defending to
king James. King James had little reason to value himself,
as he did in his full speech to the parliament, March 159,
1603; on his hereditary right and lineal descent. However,
parliament, after hearing this speech, was so complacent as
to echo back, not merely in an address, but in an act of
the legislative, his words and sentiments on this subject.
This act is intitled a “most joyful and just recognition of
the immediate, lawful, and undisputed succession, defected,
and right of the crown,” and expressly declares and enact
that immediately upon the dissolution and decease of Eli-
babeth, late queen of England, the imperial crown of the
realm of England, and of all the kingdoms, dominions,
and rights belonging to the same, did by inherent birth-right,
and lawful and undisputed succession, defend and come un-
CROWN.

to his most excellent majesty, as being lucially, justly, and lawfully next and sole heir of the blood royal of this realm.

This hereditary right to the crown, of which king James here boasted, was a mere chimera, contradicted by the general tenor of custom from the Norman invasion to his time; by the declared menace of his immediate predecessors; by many solemn proceedings of parliament; and by the express terms of law. Our kings of the Norman race were so far from succeeding as next heirs to another, and in a regular course of descent, that no instance can be produced of the next heir succeeding, which is not preceded and followed by inclusions of the next heir's being let aside. Thus, Edward I. succeeded his father Henry III., but his father Henry III. and his grandfather John, had both been raised to the throne in plain defiance of hereditary right; the right of Arthur, nephew to John, and the right of Arthur's father, conning-german to Henry. Edward II. succeeded his father Edward I.; but Edward III. deposed Edward II.; the parliament renounced all allegiance to him, and Edward III. held the crown by a parliamentary title, as much as William III. The British race began in Henry VII., and from him alone King James derived that right, which he asserted in such pompous terms: and if any prince ever came to the crown without the least colour of hereditary right, it was Henry VIII. He had no pretence to it, even as heir to the house of Lancaster. His wife, indeed, might have some as heir of the house of York; but the title of his wife was never regarded either by him or the parliament, in making the new settlement. He gained the crown by the good will of the people. He kept it by the confirmation of parliament, and by his own ability. The national union of the two roes was a much better expedient for quiet than a foundation of right. It took place in Henry VIII.; it was continued in his successors, and the nation was willing that it should be perpetuated in James and his family. But neither Henry VIII., nor his son Edward VI., might have done so with much better grace, laid the same fires on hereditary right, as king James did. One of them had recourse to parliament on every occasion, where the succession to the crown was concerned; and the other made no scruple of giving the crown by will to his cousin, in prejudice of his father's right. This right, however, such as it was, prevailed: but the authority of parliament was called in aid by Mary, to remove the objection of illegitimacy, which lay against it. Elizabeth had so little concern about hereditary right, that she neither held, nor deified to hold, her crown, by any other term than that of the statute of the 35th year of her father's reign. In the 13th year of her own reign, she declared it by law high treason, during her life, and a praemunire, after her decease, to deny the power of parliament, in limiting and binding the defiant and inheritance of the crown, or the claims to it.

The attempt to obtain a bill of exclusion in the latter end of the reign of Charles II. evidently suppos'd that the crown was hereditary, and at the same time liable to the control of parliament. This attempt proved ineffectual, and James II. succeeded.

However, in consequence of his abdication in 1688, and the declared vacancy of the throne, the lords and commons, representing all estates of the people of the realm, invited over William, prince of Orange, and the princes Mary, eldest daughter of James II., and declared them king and queen, during their lives, and the life of the survivor of them; and settled the crown on the issue of queen Mary; and on failure of such issue, on the princes Anne of Denmark, and her issue. Stat. 1 W. and M. c. 2. Upon failure of that to the issue of king William, who was the grandson of Charles I., and nephew as well as son-in-law of king James II., being the son of Mary, his eldest sister. This settlement included all the protestant posterity of king Charles I., except such other issue as king James might at any time have, which was totally omitted through fear of a popish succession. These three persons, king William, queen Mary, and queen Anne, did not take the crown by hereditary right or descent, but by way of dedication or purchase, as the lawyers call it; by which they mean any method of acquiring an estate otherwise than by descent.

By Stat. 12 and 13. W. III. c. 2, the princesses Sophie, youngest daughter of Elizabeth, queen of Bohemia, who was the daughter of James I., the most illustrious of the blood royal, and not incapacitated by professing the popish religion, and the heirs of her body, being protestants, and married to none but protestants, were declared next in succession after king William, the princes Anne, and then issue; and it is enacted that they should join in common with the church of England, as by law established. This is the last limitation of the crown that has been made by parliament; and these several actual limitations, from the time of Henry IV. to the present, clearly prove the power of the king and parliament to remove or alter the succession. It is, indeed, now again made highly penal to dispute it; for by the statute 6 Anne, c. 7, it is enacted, that if any person maliciously, advisedly, and directly, shall maintain by writing or printing, that the kings of this realm, with the authority of parliament, are not able to make laws to bind the crown, or the defect thereof, he shall be guilty of high treason; or if he maintain the same by only preaching, teaching, or advising speaking, he shall incur the penalties of a præmunire. After the death of queen Anne, the crown descended to George I., eldest son of the princes Sophia; from him to George II. and last of all to our present gracious soveraign George III. Hence it is easy to collect that the title to the crown is at present hereditary, though not quite so absolutely hereditary as formerly; and the common stock or ancestor, from whom the defect must be derived, is also different. Formerly, the common stock was: king Edward; then William the Conqueror; afterward in the time of James I. the two common stocks united, and so continued till the vacancy of the throne in 1688: now it is the princes Sophia, in whom the inheritance was vested by the new king and parliament. Formerly the defect was absolute, and the crown went to the next heir without any restriction, but now this new settlement, the inheritance is conditional, being limited to such heirs only, of the body of the princes Sophia, as are protestant members of the church of England, and are married to none but protestants. Blackstone's Commentaries, vol. i. chap. 3. See King and Parliament.

Crown-bird from Mexico, in Ornithology, the Touceco of Edwards, Buffon, and Latham, and the Cuculus Pa- jo of Gmelin; which see.

Crown-wheel of a watch, is the upper wheel next the balance, or that which drives the balance.

Crown-work, in Fortification, is a kind of work not unlike a crown. It has two fronts and two branches, and is sometimes made with three wheels: balions and two branches, but generally with one whole balion, two demi balions, and two wings or branches. It is usually erected before curtain or a balion, and commonly a ring to enclose some buildings that cannot be brought within the body of the place, or to cover the town-gates, or to occupy some commanding or advantageous spot of ground, which the
the enemy might otherwise make use of against the place.

From the salient angle, A, of the bastion TRASV, (Plate VIII. Forticat. on fig. 10) as a centre, with a radius equal to about 120 toises, describe an arc of a circle cutting the capital of the bastion produced in the point B; from the foot point B, let fall or inscribe the chords B, C, B H, each of them equal to 110 toises; on each of which, as on an exterior side, construct a front of a polygon, by drawing perpendiculars D E, E K, I, to the middle points, D, K, of the exterior sides, B C, B H, the lines, B E O, C E N, B I Q, H I P, of defence through the inward extremities, E, I, of the said perpendiculars, and finding the slants, G N, F O, L P, M Q, according to Vauban's first method for constructing the body of a place. If you follow him, you will make the perpendiculars, D E, E K, I, each equal to about 18 toises, and the faces, B G, B L, of the bastion, and those C F, H M, of the demi-bastions, each equal to about 30 toises, and will make the branches C, H, I, when produced, terminate on the faces of the adjacent ravines within 25 toises of their extremities. But if in constructing such a work, you wish to make the slants either equal to, or in a given ratio to the perpendiculars, you must have recourse to Mr. Glencie's rule, delivered upon the article Construction military, the only one for this purpose that has ever been delivered by any writer on fortification.

The ditch of this work should be about 12 toises broad, and opposite to the branches its counter-carp is parallel to the face, but in front terminates, when produced at the shoulders, like the great ditch of the body of the place. The parapet should always be 3 toises thick, in order to resist cannon shot.

Sometimes small ravels, having their capitals equal respectively to about 35 toises, are made opposite to the curtains of the crown-work, with ditches before them of about 8 toises wide.

Crown-Work is also a term sometimes made use of to denote the most advanced part of a work when besieged.

CROWNED, in Farriery. A horse is said to be crowned, when by a fall, or other accident, the knee is so hurt, that the hair falls off, without growing again.

Crowned horn-work, is a horn-work, with a crown-work before it.

CROWNING, in Architecture, is underflood, in the general, of anything that terminates, or finishes a member or decoration.

Thus, a cornice, a pediment, a crotaria, &c., are called crownings. Thus, also, the abacus is said to crown the capital; and thus any member or modeling is said to be crowned, when it has a fillet over it; and a niche is crowned, when it is covered with a capital.

Crowning, in Sea Language, denotes the finishing part of a knot made at the end of a rope. It is performed by laying the first strand over the warping, and the second strand across the first, and the third strand across the second, and through the bight of the first, then hauling the ends tight. These crownings are used in all kinds of loppers.

CROWTH, or Crowr, an instrument of music (see Plate Music,) resembling a violin, formerly in common use in the principality of Wales, as a tenor accompaniment to the harp; but now become extremely rare in that country. The length is \( \frac{1}{4} \) inches, the breadth at bottom \( \frac{1}{2} \) inches, tapering towards the top to 8 inches; its thickness is \( \frac{1}{2} \) inch, and the finger board measures 10 inches in length. It has five strings, supported by a flat bridge, placed obliquely to the sides, and is played on with a bow. A, A, represent the apertures for the hand; B, B, the strings Conducted under the end board; C, C, the pegs, and d, d, the found holes. The fifth and sixth strings are the union and octave of G, the fourth and third the name of C, and the second and first the name of D; so that the second pair of strings are a fourth, and the third a fifth to the first.

Some have supposed this instrument to have been the parent of the violin; but it is much more extensive in its compass. Two or three of the lower strings are often struck with the thumb, and serve as a base accompaniment to the notes founded with the bow.

This instrument was not peculiar to Wales; since a figure of it has been lately discovered among the outside ornaments of the abbey church of Melrose, in Scotland, built about the time of Edward II.

From the name crosworth is derived croswright, a crowrider, as a common fider is now called. The use of this instrument is almost lost.

The Welsh had also a three-stringed crosworth, which was the ancient base viol.

CROXAL, SAMUEL, in Biography, was born at Walton on Thames, of which place his father was vicar. The exact date of his birth has not been ascertained. He was educated at Eton, and from thence he removed to St. John's college, Cambridge, where he was distinguished for his poetical turn, and also for his attachment to the whig interest, in defence of which he employed his talents during the latter end of queen Anne's reign. His political pieces are now little known, and he is chiefly remembered by his translation of Alop's Fables, a work which, in some shape or other, is read by almost every young person. His first situation in the church was at Hampton, Middlesex, of which place he was vicar. After this he had successive preferments of considerable emolument, and lived in the enjoyment of some of them to an advanced age: he died Feb. 13, 1753. His principal works are, 1. "The Fair Circumst," for which he was highly blamed by his contemporaries, in having prostituted his muse to purposes of licentiousness, by converting the Song of Solomon into an amorous dialogue between a king and his mistress: "Such a profanation," says Mr. Cragg, "was not to be expected from a clergyman." 2. "Scripture Politics," being a view of the original constitution, and subsequent revolutions of the Jews. This work was intended as an introduction to the knowledge of the Old Testament, adapted to un instructed readers. Two years before his death, he published "The Royal Manual," which was generally supposed to be written by himself; though, in his preface, he stated it to have been the production of the celebrated Andrew Marvel. Dr. Croxal was the author of some fable fermes, published at different times, and on particular occasions. Biog. Brit.

CROY, in Geography, a small town of France, in the department of the Somme, 6 miles N.W. of Amiens. It had the title of a dukedom before the French revolution of the year 1790.

CROYDON, a township of America, in the state of New Hampshire and county of Cheshire, adjoining Coningham, and about 18 miles N.E. of Charlestown, incorporated in 1795, and containing, in 1775, 143, and in 1790, 537 inhabitants.

CROYDON TOWN, a village in Croydon hundred, in the county of Surrey; this town is situated near to the rugged edge of the London clay-flat, having the sand under the same exposed on the surface on the S.E. and S.W. sides of the town, and a little further on the chalk flats appear from under these. In 1805, the Surrey iron railway (northern
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(northern part) was completed up to this town from the Thames at Wandsworth, and the southern part of the railway, under the same title, was completed to Mertham, and in 1807 the Croydon canal was also completed, opening a communication from the Thames at Rotherhithe to this town.

See Canal.

Croydon Canal, the parliamentary name of a navigable canal, extending about 54 miles in the counties of Kent and Surrey, between the grand Surrey canal near Deptford, to the N.E. corner of the town of Croydon. See Canal. For seven miles at the southern end, this canal is cut in the top or surface of the London clay-stratum elevated above its natural position, the remaining 24 miles defended by a series of locks and deep-cuttings down the edges of the same strata, and prevented while cutting, and till in many of its new banks, the most opportunity which has perhaps ever occurred, of examining the several stratified and extraneous matters, composing this interesting part of the British series of strata. See Clay strata.

CROYLE STORE, in Mineralogy, a kind of spar, containing small crystals, mentioned by Woodward, as found in the mines in the peak of Derbyshire.

CROZAT, in Geography, a canal of France, in the department of the Aisne, which begins at St. Quantin, and terminates at Chauny. It has ten locks, and is 138.26 miles, or 223.50 kilometres long. However, since the year 1798, its navigation has been completely interrupted by the bad state of its locks. Herbin. Statistique de la France, vol. v. p. 112.

CROZET, a small town of France, in the department of the Loire; 12 miles N.W. of Roanne.

CROZIER, in Natural History, is the name of a fossil shell described by Brewius with open spiral turns, somewhat like a bishop's crozier. (See Crozier.) Da Cella, Conchology, Tab. II. figs. 18 and 19, has figured a recent shell from the Indies, which he thinks resembles closely this fossil shell. See Abbot.

CROZIERED ABBOT. See Abbot.

CROZON, in Geography, a small town of France, in the department of Finistere, chief place of canton, in the district of Chateaulin, with a population of 7942 individuals. The canton itself has 7 communes and 12,818 inhabitants, 10 per cent. of which is 25.2 Kilometres.

CRUACHAIN, a long mountain of Scotland, in Argyleshire, which is very high, (being about 3320 feet above the sea) and situated near the sea, on which account General Roy recommended that it should be used with Den Nevis for a series of accurate experiments on terrestrial refraction. See Phil. Trans. 1752, p. 246.

This mountain, according to Mr. Jameson, consists of flint and micaceous slate, which is followed by granite to the top.

CRUANACARRA, a small island in the Atlantic Ocean, near the west coast of the county of Galway, Ireland. Long. 54° 59' W. Greenwich, lat. 53° 15' N.

CRUANAKILLY, a small island in the Atlantic Ocean, near the west coast of the county of Galway, Ireland. Long. 54° 59' W. Greenwich, lat. 53° 18' N.

CRUCINI, or CRUZI, a small town of France, in the island of Corinthe, department of Ile de France, not far from Vico. It is the chief place of a canton, in the district of Vincennes, and has 1126 inhabitants.

CRUCES, a town of South America, in Terra Firma, situated on Cuyro river, which begins to be navigable at this place; and distant from the mouth of this river, by the nearest course, 24 miles, but by the several windings of the river 43 miles. This town is a custom-house, where an account is taken of all goods brought up the river.

CRUCES A TEU, Fr. These are earthen pots or pitchers with two handles, which are with grenades full of powder without fuses. The interfaces or intervals between the grenades are also filled with powder. The mouth of the cruce, or pot, is covered with sheep skin, which, by means of the handles, is firmly tied round the neck of it. A match is then fastened to each handle, which, after being lighted, the cruce is thrown upon the enemy when they attempt to mount the breach in a work. As soon as it falls it breaks, and the fire of the matches communicates itself to the powder and grenades. In case of a deficiency of shells, they might be thrown by the besiegers into the works of the besiegers, or by the besiegers into the works of the place besieged.

CRUCIAL Incision, in Surgery, an incision, or cut, into some fleshy parts, in form of a cros.

CRUCIAN, in Ichthyology, a species of cyprinid, common in many of the fish-ponds about London, and other parts of the south of England, though probably not a native fish. The most of it is c. d-f.), and little elongated. See Cyprinid.


Gen. Ch. CUL. Involucre two or three leaved, or two-parted; leaves linear lanceolate, keeled, acuminate, often convolvent and compacted; proper calyx none. Cor. monopetalous. Funnel-shaped; tube filiform; border four or five cleft; segments acuminate, inflamed. Stam. Filaments four or five placed in the mouth of the tube; anthers simple. Pf. Germ inferior; egg-shaped, compressed; style filiform; fru- nema two, obtuse, or capitulate. Peric. Capsules two, convolute, naked, not dehiscing. Seeds solitary, oblong. (Pericarp none, except the external coat of the seed; Gert)

E. Ch. Involucre to each flower two or three leaved, or two-parted; proper calyx none, corolla superior funnel-shaped, with a filiform tube; capsules two, oblong, naked.

Obs. Linnæus and Jussieu consider the involucres as a proper calyx, to which Carpenter, Mme. Marek, and Ventenat object, as contrary to the general character of the family.

Sp. 1. C. angustifolia. Linn. Sp. Pl. 1. Mart. 1. Lam. 1. Ill. Pl. 61. Willd. 1. Gart. tab. 24. fig. 3. Saff. Hort. 2. tab. 12. (Rubra; angustifolia minor; Tourn. 150. Rubia angustifolia; Bauh. p. 354. Barcel. i. 550. Pfeiffer; a rubra; Moris. Hist. 3. 5. 9. tab. 22. fig. penult.) "Erect; leaves in fives, linear; flowers in spikes." Rest annual, fibrous. Stems several, from six to nine inches high, procumbent at the base, afterwards ascending more slender, quadrangular, smooth. Leaves narrow, acute, shorter than the internodes. Spikes two or three inches long, terminal, erect, pubescent, not interrupted, variegated with green and white. Corolla scarcely longer than the bracts and the involucre. A native of the south of France and Italy. 2. C. macracantha. Roth. cat. bot. 1. 27. "Erect; leaves in fives, linear, mucronate; spikes alternate; involucre three-leaved." Accordingly to Willdenow scarcely more than a variety of the preceding species. 3. C. inflexa. Linn. Sp. Pl. 2. Matt. 2. Lam. 2. Willd. 2. (Rubia; Barcel. i. 520 and 539. R. plicata ceteata; Clus. Hist. 2. 177. R. latifolia; Bauh. p. 354. Rubola latifolia foli...
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Torn. 130.) "Procumbent; leaves in frous, lanceolate; flowers in spikes.

Nearly allied to C. angulifolia, and as Ligustrum bidentiis fcripta, perhaps only a variety. Ray

observes that it differs from it only in having broader leaves and spikes, and in being a larger plant. Like it, it is sometimes erect.

A native of the island of Cauda, Italy, and the coast of France. 4. C. monsplicae. Linn. Sp. Pl. 5. Mart. 5. Lam. 3. Willd. 6. (C. repens, folius fenis, foliacis longis; Savi. monpl. 194. Rubia ipica repens; Magn. monsp. 227. Rubeca supina, spica longiflora; Torn. 130.) "Procumbent; leaves acute; those on the stem, in frous, egg-shaped; on the branches, in fives or fives; flowers in spikes." Root annual. Stems several, a little ascending in their upper part, branched, somewhat rough at the angles. Spike five or six inches long, flender, variegated; corollas longer than the bracts. A native of the coast of France and the county of Nice. 5. C. maritima. Linn. Sp. Pl. 4. Mart. 5. Lam. 4. Willd. 7. (Rubia maritima; Bruth. plur. 354. R. marina; Barr. tab. 355. Rubeca maritima; Torn. 130.) "Procumbent; scantly hairy; leaves in frous, mucronate; flowers opposite, quinquefoli." Root perennial. Stems about a foot long, almost woody, permanent, branched, leafy their whole

length. Leaves fhort, ovate-lanceolate, acute, fuff, glaucous, edged with white. Bracteae egg-shaped, mucronate, glaucous, with white and fcarious edges; growing croffwise in frous and forming a loose spike. Flowers in the axis of the bracts, almost fuff, yellowish, fometime with a tinge of red on the outside, flutting in the fhort, and opening at night, fweet-fent; the divisions of the border ending in very long points. A native of France, Italy, and Caudia.

6. C. Aygiplaca. Linn. Mont. 38. Mart. 5. Lam. 5. Willd. 3. (C. herbaea; Forli. Aygip. 50.) "Leaves in frous, chiefly linear; flowers in spikes, quinquefoli." Root annual. Stems not at all woody, procumbent and diffuse near the root, erect-sprawling in the upper part. Leaves revolute, somewhat fcarious on their upper surface, and at the edges; the lowest egg-shaped, those next above lanceolate, the reflinear. Spike terminal, folicily, rather


9. C. pubescens. Willd. 6. (Rubeca cretica manica; Tourn. Cor. 5.) "Erect; leaves generally in fices, linear, pubescent; hairs of flowers pedunculate, axillary and terminal." Whole plant hoary-pubescent. Stem obtusely quadrangular. Flowers purple; tube three times the length of the involucr: border flat, with five obtuse divisions. A native of Caudia. 10. C. capitata. Lam. III. 1410. Willd. 8.BILLARD. Icon. Pl. Syr. Decal. 1. tab. 3. "Procumbent, somewhat fbrbble; leaves in fices, currence-lanceolate; flowers in heads, quinquefoli." Root perennial, hoary, fap, woody. Stem about three inches long, weak, naked near the bottom, with fifiform branches. Leaves acute, fcarious, revolute at the edges. Flowers dark-coloured, some pedunculated, others fettile; involucr one-leafed, two-parted, with fix or seven fteeth. A native of mount Lebanon, near the fummit. 11. C. epithet. Mart. 7. Mill. "Stem eriptif; leaves lanceolate, hisbifate, opposite; flowers in a terminal umbel. Stems quadrangular, rough, pricky, bending downward. Flowers blue, quadrifid. 12. C. americana. Mart. 5. Mill. "Stem erect, villous; leaves linear lanceolate, hisbifate, opposite; flowers axillary, folicily. Stem near three feet high, fbrbble, branched. Leaves covered with fhring hairs. Flowers pale blue. The fift two were fent by Dr. Houblon from the Vera Cruz in New Spain. The plants grew in the Chelfea garden very well during the fummer, but perfifted in the autumn before the feds were ripe.

CRUCIATA. C. Banh, Torn. Barr. &c. See Asperula, Galium, Rubia, and Valantia.

CRUCIATA montana minor flore carulosi; Barr. See Anacallis manelli.

CRUCIATA, in Entomology. See Cicada.

CRUCIBLE, in Chemistry. Crucibles are small vessels made of carthenware metal or other materials, employed by chemists in operations with the naked fire, such as fusions and reductions of metallic ores in the small, in which mixtures, calculations, &c. &c. The conftruction of these vessels is of no small importance to the chemist; and many observations will fuggest themselves with regard to their fection and proper use.

1. Of earthen crucibles. Formerly, when chemists made their own crucibles and fire-pots, the subject engaged much of the attention of fuch eminent practical operators, as Pott, Glaniber, Agricola, Cramer, &c. and more lately a coniderable improvement has been made by that eminent scientific manufacturer, the late Mr. Wedgewood.

A pottery ware, which should unite all the requisites for a good crucible, should be infufible at almost any heat, close and compact in texture, fo as to retain faine and metallic fluxes for a coniderable time, without being materially acted on by them, or allowing them to pass through; and fhould be able to bear fudden changes of temperature, without cracking or fplitting. It is found, however, that all these requisites are incompatible in the fame ware; fo that a fection must be made, according to the intended use.

For enduring the moft intense heat, without fufion, the hard, conifc, brown crucibles, originally made at Waldenburgh, in Helf, have long been the moft efteemed. They are manufactured, according to Pott, by mixing a very rafurfy clay with a conifc sand, the inner parts of which have been separated by the fire and rejected. These vessels are not turned on the potter’s lathe, as this would require a coniderable portion of water to bring them to the requisite degree of plasticity, but the mafs is barely moistened, and is then fashioned into the proper shape, by being strongly rammed into an iron mould. The crucibles are then very fowly dried and baked. The genuine Helfian crucibles are extremely hard, and (unfles filled with any fubftance that acts as a powerful flux) they are only fottened, but not melted down, by a heat of sufficient intenfity for any chemical operation. Though the conftructions of these texture tends to render them porous, this defect is counteracted, in a great meafe, by the very fmall quantity of water used in making them, and the confequent imallness of the


shrinks whilst drying; and their eartheness enables them to bear a pretty rapid heating and cooling without cracking.

The ordinary brown crucible ware used in this country, is whiter and finer than the Hessian, but is softer, more crumbly, and much more porous; so that lhatharge, when in fusion at a full red heat, runs through this ware nearly as easily as water forks through a sponge. It is also more fusible than the Hessian, though it is sufficiently refractory for most purposes.

The most fusible material for fire-pots that is known, and which refines the operation of salten fluxes for the longest time, is a mixture of burnt and unburnt clay; and this is the composition of the large pots or crucibles used in glas-making. The peculiar advantage of this mixture is, in subduing baked clay to fluid, or any other fusible earth, and this increasing the proportion of alunite, which is an earth of difficult fusion in fluxes, and diminishing that of flux, which is more fusible.

Crucibles intended for the fusion of metals are much improved by a mixture of piainago. This substance is infusible for 50, and being protected from the action of the air by being involved in the clay, its carbonaceous ingredient escapes combustion. It has the additional advantage of having no affinity whatever with the earths, and, therefore, does not disperse them to fusion; and the unctuous softness of this material gives a great smoothness to the surface of the crucible, which prevents it from detaining any portion of the melted material when poured out. The black-lead ware will bear sudden heating and cooling better than any other; and it is so soft, that it may readily be fawed or cut with a jagged knife, whereby the chemist may easily fit himself with hoppers, covers, &c.; but its extreme porosity renders it unfit to retain any kind of salten flux.

The useful fire-ware invented by Mr. Wedgwood is a very fine, hard, coarse grained porcelain biscuit, made of very pure clay and fluxes, which are brought to extremely fine powder before they are worked. This gives a cloveness of texture superior to any other pottery; so that crucibles made of it will long retain salten fluxes; and retorts will serve for the distillation of the most corrosive liquors, without requiring any glazing. Experience has shewn, however, that no kind of earthenware remains imperious to air, when very strongly heated. The great inconvenience attending the Wedgwood fire-pot ware is, its extreme liability to crack whilst heating or cooling, which is owing to its porcellaneous hardness, and the cloveness of its texture. This inconvenience is, in some measure, remedied, by giving the crucible a flight coating of loam or clay.

It is often required, in chemical operations, to line the inside of a crucible with charcoal; as, for example, in the reduction of many of the simple metallic oxides, or carbonated oxides, such as the oxides of manganese, copper, or lead, and for other purposes. This is sometimes done by cutting down a piece of charcoal to fit the cavity of the crucible, and then scooping a hollow in the charcoal; but it is a better and more speedy way to mix up some charcoal powder with a very little linseed meal, to moisten the mafs just sufficient to make a slightly adhesive mass to line the crucible with it, and to dry it in a red heat, by which the volatile parts of the linseed fly off, and a sufficiently firm charcoa is left.

The form of the ordinary earthen crucibles is round, or three-cornered, or sometimes bulb-shaped; and they are usually furnished with flappers of the same material, with a small hole through the top, opening obliquely, to allow the escape of any vapour, when the joining is closed by lute, and at the same time to prevent any of the dust of the fuel from falling in. As the lower part of the crucible would escape the greatest heat of the furnace, if put immediately upon the bars, and would be liable to crack by the current of cold air, the crucible is generally set on a solid earthen flag, which raises it an inch or two from the grate. The lid of the crucible may be lined on by a mixture of clay and sand; or, if it is required to be quite impervious, a mixture of pipe-clay, with about a tenth of glass of borax, may be employed, which, in a red heat, consolidates into a semi-fused tenacious mass.

Crucibles are also made of silver, iron, and platinum. A silver crucible is almost indispensable in the analysis of earths and silicates when they require to be first treated with caustic alkali; for, if earthen vessels are used for this purpose, the alkali acts also on the substance of the crucible, and thus much confusion is introduced in the process; whereas pure silver is not in any way acted on by alkali. The silver employed for this purpose should be freed from alloy, either by cupellation, or by being recovered from luna cornua. Silver, when perfectly pure, and laminated into a thin plate, is fusible at a full red heat, not more intense than can be made in a common fire; so that a crucible of this material will but just bear the heat required for the perfect fusion of the fixed alkalies, and will hardly retain the melted alkali for any great length of time. It is found, however, that this heat is by no means necessary, for most earths are completely resolved, or rendered fusible in water or acid, by previous ignition with alkali, for about an hour, in a heat short of fusion.

When a very strong heat is required to be given to the mixture of alkali and earths, chemists sometimes employ an iron crucible, previously cleaned and smoothed on the inside, which is often found very useful for other purposes.

Lastly, we may mention platina as a material for crucibles, which has been found of such singular utility for a vast variety of uses, that it is almost indispensable to the analytical chemist. Platina has the advantage of bearing the utmost intensity of heat without fusion, and not being in any degree oxidized by exposure to air, the smoothness and polish of the surface remain uninjured; so that substances which are heated in it may be detached with great ease and accuracy. There are few substances that act on platina; so that most operations that require heat may be performed safely in vessels made of this valuable metal: the particular mode of working it will be mentioned under the article Platina. It unfortunately happens, however, that the alkalies, when in this sort of fusion, diffuse a gaseous portion of this metal; and hence it is not equally valuable with pure silver under these circumstances. When platina crucibles are strongly heated, in contact with coal or coke, they should be inclosed loosely in crucibles of earthenware, otherwise the vitreous flag of the coal is apt to adhere strongly to the outside of the platina vessel, and cannot be got off without much difficulty.

CRUCICOLE, q. d. scorpions of the crofts, a designation given to the primitive Christians, by the heathens.

CRUCIFERAE, in Botany, the third natural order of the thirteenth class in the system of Jussieu. It consists of dicotyldonous polypetalous hypogynous plants, with the following peculiar character. Calyx four-leaved, almost always deciduous. Petals four, disposed in the form of a crofts, alternate with the leaves of the calyx, most frequently furnished with claws, inserted into an hypogynous disk. Stamens six, with the same inferior; four longer, in opposite pairs; two shorter, solitary, and opposite to each other, between the pairs; each of the pairs, and of the foliary filaments
filaments opposite to a leaf of the calyx. *Germ* simple, situated upon the flaminiferous disk, which is sometimes tufted between the longer and shorter flamas, and thence appears quadrilateral; style one or none; stigma moss frequently simple. *Fruit* either a siphon or a blight, i.e., either long or short; generally two-celled, and with many seeds, two-valved; valves opening lengthwise, and entirely separating from each other; partition membranous, feminiferous on each of its edges, sometimes extending beyond the valves, and forming a kind of beak. Peripetem none. *Stems* herbaceous, rarely shrubby. *Leaves* alternate (in a single instance, opposite). *Flowers*, for the most part, not axillary, scattered, or in terminal spikes, rarely panicked.

This family is universally allowed to be a very natural one, and, with some slight variations, has been kept separate by most systematic botanists. It corresponds exactly with the Linnaean class tetradynamia, except that it excludes clome, a rather anomalous genus, which does not well accord with the others, and which Juffien has therefore removed to the cappardes, his next succeeding natural order. Juffien has thrown the genera, as Linnaeus had done before him, into two divisions, according to the length of the sepal-vellic, and the absence or presence of a style. Ventelet has made some alteration in the arrangement and number of genera. In his "Tableaux du regne Vegetal," the order stands thus: I. *Erucaea*. Style scarcely any. Fruit a siphon, two or many-celled, terminated by a kind of tongue or beak; raphanus; raphanithum, separated from the preceding; pinapis; bratassa. II. *Ceratobractea*. Style scarcely any. Fruit a siphon, two-celled, terminated by a point, which is commonly very short; arabis, including tectria; helpreis; ceratethus; crucifera; radiolca, separated from fysymbium; cardamine; dentaria. III. *Alyfobractea*. Style apparent. Fruit a siphon, two-celled, rarely one-celled. Lamara; ricotta, separated from lunaria; bicentella; clypeola, including peltaria; alyluum; vesicaria, separated from alyluum; draba; coeciliae; coroneops, separated from cochlea; ibises; thallocalized; capsella, separated from thalpim; marucium, separated from lepidium; pedi-um; camchew, separated from myagrum; anaclites; vella. IV. *Myagrades*. Style apparent, or scarcely any. Fruit a siphon, from one to four-celled, valves; cells with only one seed in each, some of them often abortive; myagrum; rapilimum, separated from myagrum; bunia; erucago, separated from bunias; cardia, separated from bunias; pedio-um; capparia, also separated from bunias; crambe; fiasca.

Most of the plants of this natural order are hot to the taste, contain a portion of volatile alkali, and are reckoned detere, diuretic, and antiscorbutic. The roots or leaves of several of them are some of the most common, useful vegetables, and are esteemed nutritious to man and beast. It appears, from some experiments made in France by Dyeux and Beanne, that these plants contain sulphur, combined with their odorous principle; and that this combustible body, reduced to the state of an elastic fluid by its combination with hydrogen, constitutes their aroma.

**CRUCIFIX**. A coroll, whereon the body of Jesus Christ is fastened in effigy; much used by the Romanists in their churches, and other places, to recognize the passion of Jesus Christ, and direct their prayers to.

There are some chapters wherein Jesus Christ is the first canon, and the income of the canonry goes to the fulfillment of the crucifix.

**CRUCIFIXION**. An ancient form of execution, by fastening the criminal to an erected cross. See Cross.

**CRUCIFORM FLOWER**. *Flos cruciformis*, in Botany, is vol. x.

So called from the resemblance of its four spreading petals to a cross. Such flowers confluence a very natural order of plants; as well as a class in Tournefort's system, and even in that of Linnaeus; his Tetradynamia being entirely comprised of such, with the exception of *Cleome*, which some botanists judge to belong to the same family, and therefore placed there, even according to the Linnaean character of that class. See *Cruci-fera*, *Corolla*, and *Cleome*. 8.

**CRUCIS, EXPERIMENTUM.** See Experimentum.

**CRUCITA.** In Botany. Juf. See *Crucita*.

**CRUCKFALLA.** In Geography, a mountain of the county of Donegal, Ireland, near Bloody Farland-point.

**CRUCOLID.** A town of Naples, in the province of Calabria Cuta; 6 miles S.E. of Cutari Vecchia.

**CRUDE.** Something that has not passed the fire, or has not had the degree of concotion, i.e., of heat, requisite to prepare it for eating, or some other use.

**Crude, or raw silk,** is that which has not been put in boiling water, to unwind it from off the cad; nor boiled in water and hoop, to fit it for dyeing.

**Crude fibres.** See Sugar.

**Crude anthony,** is that which comes immediately from the mines, without any preparation, except once melting.

**Crude humours. In Medicine,** or rather in the old humoral pathology, were the humours in an unconcocted state.

In the early state of inflammation, when the secretions are thin and watery, they were termed *crude*, in contradistinction from the sublubrate state of suppuration, when a thick and purulent discharge takes place, which was said to be concoted or digested. The terms were extended, by analogy, to all the discharges from the body in febrile diseases in general, as we have flown under the heads of Concord and Cries, which see.

**CRUDEN, ALEXANDER,** in Biography, well known for his excellent Concordance of the Bible, was born in 1705 at Aberdeen, where he received his grammar learning; he afterwards studied at Marischal college, with a view of entering the church. Unfortunately, before the period arrived when he could be admitted to officiate as a public instructor, such decided symptoms of infancy appeared in his conduct, as rendered confinement necessary. Throughout the whole of his life he believed that he was delegated by Heaven to reform a guilty world; and his conduct in a thousand instances demonstrated an ardent and zeal for the good of his fellow-creatures, that merit the highest applause. Thrice, however, he was flint up in a private matter, in which, if the nature of his defeat did not lead him to exaggeration, he was cruelly treated. Once indeed he brought his action against a respectable physician, and other persons connected with him; the cause was tried, and Cruden was unable to make out a case. The verdict was given in favour of the defendants; but to the public he made an appeal; and the description of the treatment which he experienced, or which he asserted that he had experienced, cannot fail to excite the commiseration of every feeling heart. That most deplorable malady to which humanity is subject, is, we fear, too frequently treated with a degree of haughtiness that cannot be justified upon any principles. On his release from his first confinement he came to London, and engaged in some respectable families as private tutor. In the same employment he spent some years in the Isle of Man; and in 1733 he opened a shop in London, under the Royal Exchange, as bookdealer, and employed all his vacant time as a corrector of the press. In the following year he began to compile his great work, viz. "A complete Concordance of the Holy Scriptures of the Old and New Testament." We can scarcely conceive any literary work
that required more patient labour than thir, and few have been executed with greater accuracy. He had nearly executed the whole before he looked for public remuneration. The first edition was published in 1737, and dedicated to queen Caroline, who had led the editor to expect her patronage; her majesty unfortunately died a few days before the work could be got ready. The author's affairs were now embarrassed; he had none to look to for assistance, and in a fit of despondence he gave up his trade, and became a prey to melancholy. Shortly after this, he affixed the title of "Alexander the Corrector," maintained that he was divinely commissioned to reform the manners of the age, and restore the due observance of the sabbath. To prosperity he appealed, in which he saw his own character delineated. He fought, however, for earthly honours, and reconciled of his majesty the dignity of knighthood, and earnestly solicited his fellow-citizens to elect him member for the city of London. Both were dealt to his entreaties, and he turned from public offices to duties for which he was better qualified. He laboured almost incessantly, sometimes in works of pure benevolence, and at others as corrector of the press, andred himself more than four for four hours for sleep. In 1770 he left Aberdeen for London; he took lodgings at Hillington, where he died November the fifth. In private life Mr. Cruden was courteous and affable, ready to assist all that came within his reach, as well with his money as with his advice, which was founded upon the principles of practical religion. He was, with regard to doctrine, a Calvinist; but, what is much better, he was a good man, and, like his great Master, exercised in works of piety and true benevolence. Biog. Brit.

CRUDEI, in Geography, a bay of Scotland, formed by a river of the same name, on the coast of the county of Aberdeen; 8 miles S. of Peterhead.

CRUDIA, in Botany, (named after a b. tanili called Crudyl by whom the plant was communicated to Schreber,) Schr. 711. Willd. 521. Cliffs and order, decur-dria monogyna.

Gen. Ch. Cal. Perianth one-leaved; tube short, comprefTed-top shaped, gibbous before the bafe, with an oblique mouth, permanent; border four-parted, unequal, spreading, deciduous; upper segment roundish, concave; the others egg-shaped, very obtuse, less concave. Cor. none. Stam. Filaments thin, filiform, little broader than the bafe, bent in the middle, inserted into the neck of the calyx, and twice the length of its segments; anthers roundish, adnate. Py. Germ median-flushed, hipped, erect, affixed to the bottom of the upper segment by a pedicel as long as the tube, inclined to the upper segment; style capillary, inserted into the quhat of the filaments, proceeding from the back of the germ; stigma thickened, obtuse. Pril. Samara very large, egg-shaped, one celled. Seeds two, roundish, depreffed.

Eif. Ch. Calyx one leaved; border four parted. Corolla none. Filaments dilated at the bafe. Samara with about two teeth, egg-shaped.

Sp. 1. C. platia. Willd. 1. (Apolea spicata; Aubl. Guian. 3, 894; tab. 147.) "Leaves planulate; calyx oblong-lanceolate, acuminate." Root perennial. Leaves alternate, innoth. Racemes simple, axillary. Wallower, under the genus petrocopus, has directed this species to be removed from the present genus, probably for a reason which Mr. King has shewn to be unfounded, on the authority of Aublet's original specimen in the herbarium of sir Joseph Banks. See Annales de Botany, vol. 1, p. 358. 2. C. ar-ominate. Willd. 2. (Touchiera aro-omatica; Aubl. Guian. 375; tab. 148.) "Leaves simple, elliptical, acuminate." Different from the preceding chiefly in having simple leaves. Both species are natives of woods in Guiana.

CRUDITY, in Medicine, the condition of the humour previous to congestion. See CRUDE.

CRUELTY, in Ethics, is a habit of mind, directly opposed to mercy and compassion, disposing men to take delight in inflicting misery and punishment, and in satiating the thirst after thefts, by beholding the torture and anguish of the sufferers, independently of any consideration of injury received or suffered. According to the arrangement of Dr. Harley, it belongs to that class of affections which lead us to rejoice at the misery of others. Cruelty and malice, says this writer (Of the Man. p. 284.) are the genuine and necessary offspring of anger indulged and gratified. They are most apt to arise in proud, selfish, and timorous persons, those who conceive highly of their own merits, and of the consequent injustice of all offences against them; and who have an exquisite feeling and apprehension in respect to private gratifications and uneasinesses. Cruelty to brute animals indicates a mind destitute of reflection and sensibility. In the more atrocious instances of it, it either springs from, or tends to cherish, a savage disposition; and in those cases, in which it forms a part of men's amusements and pastimes, it is culpable in its source, and injurious in its effects. Bullying, cock-fighting, and such sports, which some have reckoned as manly, are remnants of barbarity; and there are other amusements and sports, which ought to be restrained and discouraged on account of the cruelty that attends heedlessness and wantonness; but as it is of pernicious influence it ought to be checked and prohibited, particularly in the early periods of life. As a preservative against all wanton acts of cruelty, even in favourite pastimes, we would recommend, more especially to young persons, the perusal of Thomson's Seasons, in his Seasons. It may serve to check the practice, or at least to diminish the pleasure, of those who torture worms and other insects in the amusements of fishing: and of other who, for the indulgence of a vitiated appetite, blend the most unfeeling cruelty with the arts of cookery. Referring to the former species of cruelty, the humane and moral poet describes it in the following lines:

"But let not on thy hook the tortur'd worm, Convulsive twirl in anguish'd folds; Whi't, by rapacious hunger swallow'd deep, Giv's, as you tear it from the bleeding breast Of the weak, help'd, uncomplaining wreath, Harist pain and horror to the tender heart."  

In the education of youth, it is of great importance that no wanton, and more especially no deliberate act of cruelty, should be permitted or encouraged.

CRUGER, or KRUGER, THEODORE, in Biography, an engraver, born at Munich about the year 1756, but though a native of Germany, he resided during the greater part of his life in Italy. He appears to have attempted the manner of Francesco Viti; but his prints, though executed in a bold style, lose their effect from his ignorance of the distribution of light and shade. He died at Rome about the year 1800. His plates are usually marked with a cipher, composed of the initials of his name; amongst them are the following:

Vita D. Ioannis Bapt. ex archetypo Andrea Sarلتi, &c. A set of 18 middle sized prints, in which are included the frontispiece, the portrait of Andrea, two subjects from Francis Bigio, and four single figures, representing Justice, Faith, Hope, and Charity.

The
The "Last Supper," after the same painter, a large plate lengthways. Huber, Manuel des Arts.

Cruger, or Kruger, Theodore, (also called Ver Crus by the Flemings, and Dalla Croce by the Italians,) an engraver, born about the year 1646, by some supposed to be the son of the last-mentioned Cruger. This artist, in 1710, was employed, with three others, to engrave the Florentine gallery. There are some other plates by him, etched and retouched with the graver, in a style which does not show any great merit. We shall only notice the following works of this master:

A Portrait of Ludovicus Adimari, engraved from P. Dandini; a small plate.

A portrait of a gentleman, from P. Bordone, in the Florentine gallery, folio.

A portrait of a lady, from the same, in the same collection, folio.

A portrait of the wife of Giorgione, from a painting by that master in the same gallery, folio.

St. Francis at prayers, from Carlo Maratta. Huber. Strutt.

Cruger, or Kruger, Matthias, brother to the elder Theodore. This artist engraved some plates from Guido and other masters, as well as from his own compositions. Strutt.

Cruger, Louis. See Krug.

Cruckshank, William, a distinguished anatomist, was born at Edinburgh in the year 1740. At the age of fourteen he was sent to the university in that city, and after studying some years there, he was removed to Glasgow. He was intended by his father for the church, and as he was very diligent, and forward in classical learning, he early employed a part of his leisure hours in teaching Greek and Latin to the younger students, and in that capacity was engaged in the family of provost Buchanan; flying at length a stronger propensity to medicine than to theology, he was placed under the care of Mr. Moore, surgeon, at Glasgow. From Mr. Moore Mr. Cruckshank removed, in 1771, to London, where he was soon introduced, and made librarian to Dr. William Hunter, in which office he acquitted himself so well, that on the secession of Mr. Houstoun, he became the assistant, and, in a little time, joint lecturer in anatomy, with the doctor. He had here full scope for his abilities, and as he was as diligent as he was skilful, he added largely to the beautiful collection of anatomical preparations with which the museum of Dr. Hunter was filled, particularly by his curious injections of the lymphatic vessels. The result of his acquirements in this branch of anatomy, which he cultivated with affinity and success, he published in 1786, under the title of "The Anatomy of the Aborvent Vessels of the Human Body." In this work, which was re-published in 1790, he demonstrated the structure and situation of the valvular lymphatic absorbents. On the death of Dr. William Hunter, which happened in the year 1773, Mr. Cruckshank became partner in the lectures with the doctor's nephew, Dr. Baillie, and had with him the joint use of the museum, for the purpose of illustrating the lectures. The museum has since, agreeably to the direction of Dr. Hunter in his will, been sent to Glasgow. In 1795, Mr. Cruckshank communicated to the Royal Society an account of the regeneration of the nerves. The paper was printed in the Philosophical Transactions for that year. The same year he published a pamphlet on inebriate perspiration; and in 1797, an account of appearances in the ovaria of rabbits, in different stages of pregnancy; but his fame rests upon, and is best supported by his anatomy of the absorbents, which continues to be considered as the most correct and valuable work on the subject, now extant. He died on the 27th of June, 1820. Annals of Medicine, vol. 3.

Crusie, from the German kruif, a-crois, signifies to crofs to-and-fro, to fall up and down within a certain space of the sea, called the cruising latitudes, in quest of vessels, or fects of an enemy, &c.

Cruisers, in the Navy, are small men of war, made use of to-and-fro in the Channel, and elsewhere, to secure our merchant-flips and vessels from the enemy's small frigates and privateers. They are generally fuch as fail well, and are commonly well manned; and, indeed, the safety of the trade in the Channel, and up and down the foundings, and other places, absolutely requires the constant keeping out of such fhips at fes.

Crutt, in Geography, in an island in the Atlantic ocean, near the West coast of the county of Donegal, Ireland, Long. 5° 16' W. Greenwich. Lat. 55° 2' N.

Crulay, a small town of France, in the department of the Eure, 12 miles E. of Vernon.

Crumaau, or Krumau, or Krumau, a town of Moravia, in the circle of Znaim; 15 miles N. E. of Znaim.

Crumaau, or Znaimau, a town of Bohemia, in the circle of Prachatitz, on the river Moldau; 17 miles S.E. of Prachatitz, and 76 S. of Prague.

Crumena, from nýgo, pando, I hang, in Zoology, the name given by Caridan, and some others, to the puke or pouch which the opossum has under its belly, and into which it receives the young in time of danger.

Scaliger, supposing there might be other animals, as well as the opossum, to which nature might have given this fort of pouch, has erected a general distinction, under the name of animaux crumenistes; but the opossum is the only species yet known to belong to this genus. The only influence that naturalists seem to afford us of a like provision of nature for the care of the young, is what is related of some of the fifth kind. Oppian, in his Halieutics, mentions this property of receiving the young into the body, in time of danger, to be in the dog-fish, and in the squatina, and some others; and Typhon observes, that, in the anatomy of a female dog-fish, he saw two flits under the belly, closed up in their natural state, but easily disengaged, fo as to be capable of receiving the young fish; and that these went not into the womb, nor any other peculiar part, but only into the cavity of the abdomen.

The account given by Oppian is, that, in time of danger from a storm, or from any fish or prey pursuing the young fry, they go into the parent's belly. If, therefore, after this account of Typhon's, any young fish should ever be found loose in the cavity of the mother's belly, it will prove the truth of this passage in Oppian, which has been so much disputed. Phil. Trans. No. 739, p. 120.

Crumentata, a term used by Julius Scaliger to express such animals as have a pouch or bag under their belly, into which young ones may be received in time of danger. See Opossum.

Crumhubbell, a silver mine in Silelia, which produces galena and silver ore, was thought by some to be the most elevated above the sea of any known mine, but Stervingen silver-mine in the Tyrol (elevated 7512 French feet) and some others, are still higher.

Crumirum, in Ancient Geography, a town of Lower Pannonia.

Crumlin Canal, sometimes, though improperly, called Kircra Chapel canal, (under which name it is shortly described in our article Canal.) This canal, or water-level, in its general direction, is nearly west, with a bending course of two miles, in the county of Glamorgan in South Wales;
it is throughout about level with the highest tides, or 22 feet above low-water mark in the Bristol Channel; it commences within ten yards of the river Nethy, at Trueman's Hall, butting sheet, which is parallel to the commencement of the Nethy canal at Giant's-grave-pit, and proceeds through Crumlin bog to Lan-y-vern colliery, whence a tram road proceeds in a tunnel, half a mile into the hill, and there intersects the fame great vein of run or bituminous coals, which Mefir. Smith and Co. are working at Lanfamlet. This canal is about 26 feet wide at top, 14 at bottom, and 3 feet deep, and was cut under the direction of Mr. Thomas Dafford, ten, at the sole expense of Edward Elton, esq. who, it is to be feared, is not lightly reperated by the small trade thereon, for his large expenses in the undertaking. Crumlin bog, of about 750 acres, was once drained by a company of leathers, under lord Verney and the lords of Nethy abbey, to whom the fame belongs.

Crumlin-Water, a small river of the county of Antrim, Ireland, which rises in mont Devis, and falls into Lough Neagh.

CRUMMEL-BOTTOM, or Cranwell-Bottom quarries; these are situated near the village of Ealand, in the West Riding of Yorkshire, and furnish great part of the excellent paling-wood which is now so generally used in the foot pavements in London, by means of the Calder and Hebie navigation, which passes close by them. (See CANAL.) This valuable stone, and the white or grey slate from the same quarries, are the produce of the fourth grit-wood rock, reckoning upwards from the mineral or Derbyley lime stone grita. This rock is remarkable in every part of its course through the kingdom for its abundance of mica, in small plates, so disposed as to occasion the stone to split with the utmost ease and truth, almost as thin as we please. Near Halifax the same is quarried in such large slabs as to form the largest kitchens with only four or six stones; and it also splits so freely and truly in other directions, that long beams are not unfortunately cleaved out of it, of which forms very remarkable specimens are, or were very lately, to be seen opposite to the late sir William Staine's stone-wharf in Milbalm street, Wellington.

CRUMNOCK LAKE, or Water, in Cumberland, lies on the N.W. of Buttermere; it is about four miles long, and half a mile in breadth, has three small islands in it, one of which is a naked rock, the other are covered with wood. This lake is extremely deep and clear, and contains abundance of char fish, from six to eight ounces weight each. The Coker river is fed from this lake, which itself receives the waters of Buttermere, and Lowes-waters.

CRUMP ISLAND, a small island in the West Indies about a mile long, near the N.E. end of the island of Antigua. M.lat. 17° 14'. W. long. 61° 25'.

CRUNDA DEL CONDE, a town of Spain, in Old Castile, on the Duero, near Aranda de Duero.

CRUNARAD, or CRUSARAD, a hill of the county of Donegal, Ireland, 2 miles N. of Killibegs. It has a remarkably sharp top, and is much higher than any of the hills eastward of it, which makes it an excellent mark for finding the entrance of Killibegs harbour. McKenize.

CRUNI, in Ancient Geography, a town of Greece, in the Peloponnesus, placed by Strabo between Chalies and Pyle. —Also, a river of the Peloponnesus, which is near the aforementioned town. —Also, a town of Lower Morea, upon the Euxine sea, N.E. of Oedissus, and W. of the Cuss Teftibars.

CRU OF THE Blood, is a term synonymous with Caftamentum.

CRUPEZIA, in Antiquity, wooden shoes, or clogs, worn by the Mesochori.

CRUPINA, in Botany, a name by which some authors call the cardium filletus, or flar thistle.

CRUPPEK is used by some for the hind or round part, or stump of a horse, comprehended between the place of the saddle and the tail. See Horse.

The word is formed from the French croupe, which signifies the same. It denotes also a thong of leather put under a horse's tail, and fixed to the saddle, to prevent it from being thrown forward. See Saddle.

CvrUra CRITORIDIS, in Anatomy, a term synonymous with corpora cavernosa crucoidis.

CrvrA cerebris, are two portions of medullary substance, forming the trunk of the arbor vitae, and joining the upper and back part of the pons varolii. See Brain.

CruA cerebris, are two large processes of medullary matter, departing from the inferior surface of the cerebrum, to join the pons varolii at its anterior part, where they unite at an acute angle. They are called by Soemmerring pro- cessus medullis cerebris. See Brain.

CruA diaphragmatis, two portions of musle, arising from the bodies of the lumbar vertebrae, and fixed to the posterior part of the greater diaphragm. They constitute the latter diaphragm. See Diaphragm.

CruA fornici, in the brain. There are four of these, viz. two anterior, and two posterior. The former are distinct round medullary chords, arising separately in the anterior lobes of the brain, and uniting to form the pilla or body of the fornix; the posterior cura are thin, broad, and flat, and united by the medullary expansion, termed trigus or pfeiferum. They run along the anterior part of the great hippocampus. See Brain.

CruA penis, are the same as the corpora cavernosa of that part.

CRURÆUS, or CRURALIS Musculus, in Mythology, derives its origin from the anterior rounded surface of the os femoris, and proceeds in a straight direction to the basis of the patella. It cannot be at all separated from the vatus internus, and for the most part is as intimately united to the vatus externus. These three muscles should indeed be included under one name and description. The curulis will assist in extending the knee-joint.

CRURAL, in Anatomy, is a term applied to the vessels, &c. of the lower extremity; viz. to the femoral artery and vein. There is an anterior cural nerve, derived from the lumbar nerves, which supplies the front of the thigh. See Nerves.

CRURAL Arch, is the space left under the lower border of the tendon of the external oblique muscle, where it passes from the spine of the ilium to the pubis. The broad insertion, which the tendon has into the angle and crista of the pubis, gives to this part a concave form, which justifies the appellation of cural arch. The space in question is completely filled by various parts, which are passing between the thigh and the pelvis. Its outer part contains the iliacus intermus, and pous magnus muscles; between which, on the anterior part, lies the anterior cural nerve. Next to these muscles, towards the inside, is the femoral artery; and its corresponding vein is still nearer to the pubis. The trunks of the lymphatic of the lower extremity enter the pelvis, about the femoral vessels; and there is frequently a large gland, or more than one, under the tendon.

CRUS, denotes all that part of the body which reaches from the buttocks to the toes; and is divided into thigh, leg, and foot.

CRUSA, in Ancient Geography, a town of Alia Minor, in the Ceramic gulf.

CRUSADERS.
CRUSADES. See Crusades.

CRUSÆÆ, a people of Macedonia, who inhabited the country called Crysis in Mygdonia.

CRUSCA, an Italian term, signifying bran, or what remains of meal after the flour has been lifted out. It is only in use among us to denote that celebrated academy called Della Crusca, established at Florence, for purifying and perfecting the Tuscan language.

The academy took its name from its office, and the end proposed by it, which is to refine the language, and, as it were, to separate it from the bran. Accordingly, its device is a sieve, and its motto, _If piu bel far ne èglio; that is, It gathers the finest flour thereof._

In the hall or apartment where the academy meets, M. Monconis informs us, every thing bears allusion to the name and device: the feats are in form of a baker’s balest; their Backs like a shovel for moving of corn; the cushions of grey fattin in form of facks, or wallats; and the branches, where the lights are placed, like-wise remembles facks.

The vocabulary Della Crusca is an excellent Italian dictionary, composed by this academy.

CRUSIUS, GOTTLIEB LEIBRECHT, in Biography, a German engraver, born in the year 1750. He studied design from time at Leipzig, and made drawings for the book-sellers. He afterwards began to engrave, and went to Paris to complete his studies. He then again established himself at Leipzig, where he was principally employed in decorating the publications of the day. He had a brother named Carl, who likewise engraved for books, and died in 1779. Heincksen.

CRUSSEILLE, in Geography, a small town of France, in the department of Mont Blanc, formerly the duchy of Savoy; 7 miles N. of Annecy.

CRUSSEL, in Commerce, a piece of coin in Germany, valued at about three farthings.

CRUSSEL, in Geography, a small town of France, in the department of the Ardeche, with an ancient castle; 9 miles S. of Tournon.

CRUST of the Earth, in Geology, a term implying the rocks and strata which are within the reach of geolog-ical observation, by means of valleys, fissures, mines, &c. It seems more than probable, that the whole of this is composed of straffated matters, formed from aqueous depositions, since when much dislocated and broken in some parts, and being very thick and assuming a crystalline structure in others. See Strata.

With some early writers, the term crust was applied only to the alluvial mixtures or mould, &c. which cover the strata in most instances.

CRUSTA LAETEA, a Medical term, applied to a species of itch-y running febb, which appears in the face of infants one or two years of age: they are generally observed in infants at the breast, that have not yet cut their teeth. However, the disease sometimes also appears later, as it has been met with in children of four or six years of age; and indeed it is not a disease of infants alone, for it has also, though rarely, been observed in adults. Children that are liable to it, are mostly attacked with it as often as they cut a tooth. Instead of the diarrhoea and cough, which are the more ordinary attendants of teething, the eruption appears in these subjects; and again dries up when the tooth is cut, as then the irritation has ceased. See the article Achaor.

This disease is not attended with fever: it always appears first in the face, on the cheeks, mouth, lips, and forehead, in small ulcers of the size of a lentil, which contain a pale yellow gelatinous fluid. These small ulcers soon burn, per-
be increased, whenever it is colive. But in the simple genuine curd of milk, more sucrin, especially lime-water and vinegar, are chiefly recommended. Autonomic and medicinal medicines may also be tried.

When the milk of the mother or nurse is not thought to possess the requisite qualities, or when the seems not to be perfectly healthy, the infant should immediately be weaned, or a better breed of milk be found for it. The child's pap should be made with stale bread crumb, mixed in a mixture of equal parts of milk and water, with the occasional addition of a little Venetian soap and sugar.

As a remedy in this disorder, some have greatly recommended the 'vitis tricolor.'

CRUSTACEOUS Animals, a class of creatures, chiefly of the aquatic kind, and which are distinguished by having the body cased in a semi-calcareous crust, consisting either of one very large, and a number of small pieces; or of a series of annulations, nearly of an equal size throughout. These are defended by means of distinct gills like fishes; and, like insects, are provided with jaws, teeters at the mouth, and antennae either two or four in number; the eyes in general two, or one apparently, and the feet numerous and articulate.

The French naturalists divide all crustaceous animals into two orders: crustacea pellicules, and crustacea flexibles. The first of these are complete, for the most part, of the Linnean cancri, or the crab and lobster tribe, as already noticed under our article Cancer; the other includes his genera albus, ostreae, lepidae, and monocota; the whole of which are comprehended in the system of that author, among the arthropod tribe of insects. See articles Cancer and Entomology.

CRUSTULA, in Medical Writers, the name as ecys-mna, in the eye, being a defect of the blood from the arteries into the tunica conjunctiva, occasioned by a wound, flinch, &c.

CRUSTUMERIUM, in Ancient Geography, a town of Italy, in the country of the Sabines, situated on the eastern bank of the Tiber, a little to the north of Falerne. According to Cuvierus, the ruins of this town appeared, in his time, in a woody tract, a little to the east of Marcelligiano Vecchio. Livy calls the hills in its neighbourhood the Motus Crustumini. This town was taken and destroyed by the Romans in the 4th year of Rome, and the inhabitants were removed to the capital.

CRUSTUMINUS Agri, a territory of Italy, so called by Pausan, and placed in Etruria.

CRUSTUMIUM, a river of Italy, in Umbria, between Ariminus and Perusium.

CRUSY. in Geography, a small town of France, in the department of the Héault; 9 miles S. of Saint Pons.

CRUTCHED, or CROUCHED Friars; so called from the figure of a crutch, or the letter T, which they bore on their cloaks above the left shoulder. Having been instituted to attend upon the sick and the infirm, in hospitals adjoining to their convents, they adapted the crutch as their distinctive badge. St. Anthony of Egypt, the patriarch of the Eastern monks, was the patron saint of their mother house, or first foundation, which was founded near the city of Vienna in Dauphiné, about the latter end of the eleventh century. Hence the painters have been accustomed to represent the patriarch himself with this badge upon his shoulder. The Crutched friars had a convent and hospital in a street in London, which still bears their name; besides other establishments at Oxford, Colchester, Guildford, and Reigate.

CRUX, in Entomology. See CARAZUS, CASSIDA, CICADA, CINEX, Coccinella, Curculio, and Philana.

CRUX HARRING. See Herring.

CRUX Haven, in Geography, a sea-port town of Germany, situated on the north-east of the district of Bremen, in the German ocean, between the mouths of the Elbe and the Weser, lat. 52° 30′; long. 13° 0′.

CRUYS, or CRUYS-HAUTHEM, in Biography, a designer and engraver, born in Gand about the year 1640. In 1673 they find him at Rome, having become an ecclesiastic. This article excels, from his own designs, a considerable number of views of Rome, engraved with figures, and executed with great delieacy and spirit; and amongst others a set in 23 plates, 1695. We have like-wise, by him, many drawings on vellum, which are designed upon a very small scale with incredible neatness and accuracy. Huber, Manuel des Arts.

CRUYS, in Geography, a small town of France, in the department of the Alpe, 9 miles S.W. of Sifferon.

CRUYSFORD, a bay on the coast of Norway; 20 miles S.W. of Bergen.

CRUSHAGE, in Ichthyology, the name of a kind of fish, the Squalus Figaro of Greece, somewhat approaching to that strange fish, the xycene, but much less monstrous, its head being only triangular, or something like the figure of a heart, whence Whiting has named it xycene affinis capite triangulo. The eyes are very small, and are placed as in the xycene, at the sides of the head; the mouth is small and triangular, and placed at a very short distance below the end of the nose, and is furnished with three rows of very small teeth. See Squalus Figaro.

CRUYS-HAUTHEM, in Geography, a small town of France, in the department of the Elscat, chief place of a canton, in the district of Gand, with a population of 5145 individuals. The canton itself contains 29 communes, upon a territorial extent of 85 kilometres, and 17,158 inhabitants.

CRUZ, Juan Pantoja de la, in Biography, a painter, born in Madrid in the year 1511. He was the scholar of Alonzo Sanchez Cueto, whom he succeeded as painter of the chamber under King Philip II. Juan sometimes painted history, but his forte lay in portrait. He died in 1610.

Under this name, J. S. Miller, an English artist, has engraved two plates, intitled "Writing the Billet," and "Delivering the Billet." Heimcken, however, considers them as no other than fictitious imitations of the Spanish fable. Cumberland. Heimcken.

CRUZ DE LA, Don Juan, and Don Manuel, two artists, probably brothers, born at Madrid about the year 1750. In 1777, were published in that city a set of 12 folio plates, representing Spanish costume, designed by Don Manuel, and engraved by Don Juan. They are entitled, "Collection de Trajes de Espana, tanto antiguos como modernos." Huber, Manuel des Arts.

CRUZ, St. See St. Croix.

CRUZ, Santa, a port on the western coast of America, situated on the coast of the gulf of Biscay, the entrance of which is, according to the determination of La Pérouse, about 6 W. long from Paris 45° 0′ 15′; or, according to an observation of captain Cook, 22° 30′ E. of Greenwich, and N. lat., according to the chart of the Spaniards, 55° 0′ 15′. This gulf runs upwards of eight leagues inland, contains several large islands, and presents in its circumference 11 fine harbours, where ships may anchor with safety. Maurelle says, that he does not know a single port in all Europe that could be preferred to that of Santa Cruz. When Maurelle visited this port in 1775, it was soon visited by the Indians in its vicinity. Traffic commenced, the Indians exchanging
ing their furs and various trinkets for glass beads, pieces of old iron, &c. These Indians are of a clear olive color, many of them having nevertheless a perfectly white skin. With a well-proportioned countenance, they are robust, courageous, arrogant, and warlike. Their clothes consist of the undressed skins of otters, sea-wolves, beaver (a species of deer), bears, and other animals taken in the chase. Several wear boots of smooth skins, laced up before; their hats, in the form of a cone, are woven from fine bark of trees; on their wrists they wear bracelets of copper, iron, or fins of whale; and round the neck, necklaces of fish-bone or copper. Their ear-rings are mother-of-pearl, or plates of copper, embossed with a topaz coloured rosin and jet beads. Their hair is long and thick, held together in a small queue by a comb, and tied with a narrow piece of coarse linen. The aspect of the women is pleasing; they too our fresh, their cheeks of a lively red, and their hair long and plaited. About the loins they tie a long rope of smooth skin, which covers them from the neck to the feet, and the sleeves reach down to the wrists. Over this gown they put kusus of otters, or other animals, as a defence from the weather. All the married women have in their lower lip a large aperture, filled up by an oval piece of wood, the smallest diameter of which is about an inch; and its size is larger or smaller, as the person who wears it is older or younger. The girls only wear a copper needle, which crosses the lip in the part where the ornament is afterwards placed.

In war these Indians wear cuirasses and shoulder-pieces, resembling the whale-bone flays of Europeans; round the neck is a large silver gorget, covering them up to the eyes; and on the head is a helmet, generally made of the head of some wild beast. From the waist to the feet they have a kind of apron, like the cuirasses, formed of narrow boards tied together with threads, and thus rendered flexible. From the shoulder to the knee hangs a fur cloak. With these arms they are invulnerable to their enemies. Their offensive weapons are arrows and bows, lances headed with iron, iron-knives longer than European bayonets, and small hatchets of file or green bone, so hard as to cleave the clove wood without having its edge turned.

Their language is pronounced with great difficulty; and they speak from the throat with a motion of the tongue against the palate. Near the Port, where these Indians attend the market, they seem to be diligent and laborious; and they supply purchasers with a great variety of articles; such as well-woven buffs, shaded with various colours, skins of otters, bears, &c.; well-woven coverlets of common cloth, and large ribbons of the same; and the fial, of which this cloth is made; wooden trowsers, curtly woven; painted canoes; and a great variety of trinkets, of their own device and manufacture. They furnish the market also with great plenty and variety of fish, salmon, eel, pike, &c. The banks are lined with shells; and they use a great quantity of mother-of-pearl for ear-rings, but it did not appear to these voyagers whence they obtained it. Their food consists of fish, boiled or roasted, herbs and roots that are the produce of their mountains, and the flesh of animals taken in the chase. Macoune was not able to ascertain whether they had any ideas or forms of religion; he observed, however, that they sometimes inclined their bodies towards the sun, but could not tell whether it was an act of devotion. In two islands he found three bodies laid in boxes, and decorated in their furs, which were placed in a little hut, on a platform of the branches of trees.

Their country is hilly, the mountains very high, and their slope almost always extending to the sea. The soil, which is stony, is covered with lofty pine-trees; and as they are easily blown down, they rot and form a thick mould, in which are found nettle, camomile, wild ery, apple, elder, horse-wood, birch, and many other plants. The town of Santa Cruz is pleasantly situated, and, though not
C R U

not so crowded with inhabitants as Funchal, it is better laid out, more open, cleaner, and more comfortable. The well-built pier juts out into the sea; the contrivances for life and easy landing near it; the handsome almeyda, or mall, along the quay, shaded with several rows of trees; the fountain adorned with marble statues in the square, all apparently of late construction, denote a government attentive to the improvement of the place. The walks and rides in the neighbourhood of the town are more level and agreeable than those near Funchal in Madeira; and those who visited them found that they breathed a lighter purer air than usual, and felt, says Sir G. Staunton, that they were in a fortunate island. The governor of the island resides at Santa Cruz; though the courts of justice are held at St. Christophe de Luzane, the capital of the island. All the houses of the town, and all the ground and rocks in the neighbourhood of Santa Cruz, are manfully volcanic. The buildings of both Santa Cruz and Luzane exhibited no trace of any other kind; and as no limestone is found in Teresina, the lime is supplied from the neighbouring islands.

CRUZADO, or CRUZADE, an expedition to the Holy Land. See CRUZADE.

CRUZADO, or CRUZADE, in Commerce, is a Portuguese coin, struck under Alphonso V. about the year 1457, at the time when pope Calixtus lent the bull for a crusade against the infidels.

It had its name from a cros, which it bears on one side; the arms of Portugal being on the other.

CRUZADO. Bull of, a bull published every two years in Spanish South America, and containing an abscission from past offenses by the pope, and among other immunities, permission to eat several kinds of prohibited food, during Lent, and on fast days; the monks employed in dispersing these bulls, exolt their virtues with all the fervour of interested eloquence; the people, ignorant and credulous, listen with implicit affect; and every perfon in the Spanish colonies, of European, Creole, or mixed race, purchases a bull, which is deemed essential to his salvation, at the rate set upon it by government; this price varies according to the rank of different persons. Servants, or slaves, pay the value of 1/2; other Spaniards pay 8 reals; and those in public office, 10 reals; the price has also varied at different periods. From the produce of this bull, there arises an annual revenue of 150,000 pesos.


Gen. Ch. Cal. Perianth four-leaved, permanent; leaves egg-shaped, concave; two inner ones with a very thin laminated margin. Bracte three, at the base of the calyx, permanent; anterior one linear, acute; lateral ones egg-shaped. Cor. none. Stam. Filaments four, capillary, a little shorter than the calyx; anthers small. Fil. Germ superior, egg-shaped, obtuse, compressed; style very short, two-parted; segments spreading; stigmas simple. Peric. none, except the diverging calyx, which falls off with the seed. Seed solitary, egg-shaped.

Eff. Ch. Calyx four-leaved, with three leaves on the outside. Corolla none. Seed solitary, enclosed by the calyx.

sp. C. bifronsica. Linn. f. 203. Stem tall. Leaves opposite, lanceolate, quite entire. Flowers spike-like, collected into a panicule. A native of South America, in the province of Cuzana. The trivial name given to it by Linnaeus is founded on a mistake.

CRUZY, in Geography, a small town of France, in the department of the Yonne, 9 miles north-east of Tonnerre.

CRY. See Hur. GLAMOR. HAM. &c.

CRYA, in Ancient Geography, a cape of Asia Minor, about the middle, and towards the north-west part of the Gulf of Glaucus; this promontory was well-north-west of that of Telmisius.—Alfo, a fountain of Asia, in Cappadocia, near Cesaras.—And also, a town of Asia Minor, in Caria, reckoned to Pliny; and in Lycia, according to Stephan. Byz.

CRYASSA, or CRYASSA, an ancient town of Asia Minor, in the northern part of the Gulf of Glaucus, north of CREA, and north-west of the town of Telmisius.

CRYEN TUSKLE, three small islands, situated in the northern part of the Gulf of Glaucus, one of the three is a rock, and Stephan. Byz. calls the other two Caryina and Alina. He adds, that they belonged to the town of Crys.

CRYMN, a town of Asia Minor, in Lycia, probably the same with the Cremna of Strabo.

CRYMODES, from κρύος, cold, in Medical Writers, a cold flaming fever, but often accompanied with an inflammation of the inner parts.

CRYNIS, in Ancient Geography, a river of Asia Minor, in Bithynia.

CRYON, a river of Asia Minor, which, according to Pliny, discharged itself into the Hermus.


Gen. Ch. Cal. Glume one-flowered, two-valved; valves oblong, lanceolate, flat, somewhat unequal. Cor. Glume two-valved, longer than the calyx; valves lanceolate, awnless, equally unequal. Stam. Filaments three, often only two, capillary, longer than the corolla; anthers oblong, Fil. Germ superior, oblong; styles two, capillary; stigmas feathery. Peric. none, the corolla enclosing the seed. Seed solitary, egg-shaped, acute.

Eff. Ch. Calyx two-valved, sessile, lanceolate. Corolla two-valved, longer than the corolla, awnless.

CRY

Phialaria arnaria: Lam. Ill. See Phialaria arnaria.

CRYPT, (Martiorum, Confessi, Holy Holes), formed of crypta, alta confa, a hole; whence crypta, crypta; is a subterranean vault or chapel, constructed under the high altar, or eastern end in most ascendant cathedral, abbey, and collegiate churches, for preserving the bodies of martyrs, or other saints, and for the performance of divine worship. The primitive Christians, having been accustomed in the times of persecution to hide their religious assemblies in the catacombs, where there were to be met with, as at Rome, Naples, Nola, Lyons, &c., as we learn from Tertullian ad Scapulum, cap. 3, and from the decrees of the emperors and prefects against such assemblies, (Euseb. Hist. l. vii. c. 11. i. ix. c. 2.) affected, upon the ceasing of persecution, to build their churches over, or near to such sepulchres of the martyrs; and, in situations where there were not to be found, they fabricated subterranean vaults, called crypts, (being quite distinct places from the common crypta,) in which they deposited such remains of martyrs, or other saints as they could procure; and which they furnished with altars and other requisites for the stated worship. This appears from Gregory of Tours, an author of the sixth century, and from subsequent writers. In William Thorus, the monk of Canterbury, mention is made of a particular collocet to be said in the service performed in the crypts. The crypt under St. Peter's Church of the Vatican at Rome, called the Confession of St. Peter, and Lic.

min: Apostolorum, is provided with diverse altars, and also with prie des to officiate at them; but it is prohibited, under pain of excommunication, as an inscription in the vault testifies, for any woman to enter into it, except on Whitsunday, on which day it is equally unlawful for men to visit the place. See the crypts under Canterbury, York, and Winchester cathedrals, also under the churches of St. Grunbiuld at Oxford, Christ Church in Hampstead, Wimpole in London, Durham, and York, now used as a bone house, &c. See likewise representations of the crypt of Grasmith, Peterborough, Waverly, and Wells, in "Carter's Antient Architecture of England," vol. i. plates xxvii. in. M.

S. Champan, describing the outside of the Vatican, speaks of the crypt of St. Andrew, St. Paul, &c. About two furlongs to the northward of Latikea or Laonizia in Syria, are several of these crypts or sepulchral chambers, hollowed in the rocky ground, some 20 or 30 feet square, but of low height, and never proportionable. A range of narrow cells, wide enough to receive one coffin, sarcophagus, or sarc. long enough sometimes for two or three, runs along the sides of most of these sepulchral chambers, and appears to be the only provision that was made, provided, indeed, they were only made for the reception of the dead. One of these crypts is held in great veneration by the Greeks; they call it "St. Teck a," in commemoration of some acts of penance and mortification that are said to have been performed here by that first virgin martyr. In the midst of it there is a fountain, suppos'd to be instrumental in producing miraculous visions, and extraordinary cures. Here they bring diseased perfons, and after having washed them with holy water, and perfumed them, they return confident of a speedy cure. Here likewise the aged and infirm pretend to receive warnings of their approaching dissolution, while the young are made to foresee a train of events that are to occur in the future course of their lives. The sepulchral chambers near Jebile, Tortos, and the Serpent fountain, together with those that are commonly call'd the "Royal Sepulchres at Jerusalem," all of which communicate with each other by narrow entrances, are of the like contrivance and workmanship with the crypts of Latikea; as were, probably, the cave of Machpelah, and the other sepulchres of the sons of Heth. (Gen. xxvii.) Instead of those long narrow cells that are common in most of the other crypts; some of those at Jerusalem are single chambers, others have benches of stone, ranged one over another, upon which the coffins were to be placed. To these we may join the sepulchre where our Saviour was laid, which was also hewn out of the natural rock, (Matt. xxvii.) and lay originally under ground like the others; but by St. Helena's cutting away the rock round about it, that the floor of it might be upon a level with the roof of the pavement of the church, it is now a grotto above ground, or curiously overlaid with marble. It consists of one chamber only, without cells, benches, or ornaments, being about seven feet square, and fix high; and over the place where the body was laid had been erected, for many years, an oblong table of stone, or thorax, &c, 3 feet broad, and nearly of the same height, which serves the Latikea for an altar. The low narrow door or entrance, where the stone was fixed and sealed, till rolled away by the angel, full continues to conduci us within it; and as this was not situated in the middle, but on the left hand, and as the grave where Christ was laid, may well be presumed to have been placed within it, on the right hand, or where the altar is at present, we may, from these circumstances, well account for Mary and John (John, xx. 5, 11.) being obliged
"to floor down, before they could look into it." The sepulchre of Lazarus was likewise of the same kind; as were the sepulchres of the prophets, as they are now called, with many other caves that are met with on the mount of Olives; which might, all of them, have either ferved, or have been originally designed for burying places, having their proper stones, or opercula, to lay upon them, or to shut them up. Shaw's Travels, p. 264, &c.

Vitruvius used the word crypta for a part of a building, answering nearly to our cellar; Juvenal, for a cleva. Hence crypta porticus, a subterraneous place, arched, or vaulted; used as an under-work, or passage, in old walls. See Crypto-porticus.

The same is also used for the decoration at the entry of a grotto.

CRYPT is also used by some of our ancient writers for a chapel, or oratory under ground.

CRYPTA, in Anatomy; a name given to glands which are supposed to be of the most simple form; viz. such as consist of a simple bag, with a direct and short opening.

CRYPTANDRA, in Botany, (from κρυπτή to cover or conceal, and ωγις, a man, in allusion to the five scales which conceal the flamma), is a New Holland genus of plants, first established by the writer of this article in the 4th volume of the Linnean Society's Transactions, p. 217. Cliffs and order, pentandra monogynia. Nat. Ord. probably Rheodendron of Jussieu.

Gen. Ch. Cal. perianthium of five leaves, inferior, permanent, membranaceous. Cor. of one petal, much longer than the calyx, tubular or bell-shaped, externally pubescent, its margin in five regular and equal segments. Scales five, alternate with the segments of the corolla, and inserted at their base, vaulted, roundish. Stam. five, inserted into the tube of the corolla at its summit, under each of the scales; elements very short; anthers roundish, vertical, bearded, of two cells. Fil. Germin superior, roundish, three-lobed; style simple, straight, as long as the tube of the corolla; stigma inall, three cleft. Peric. Capsule of three valves and three cells, the partitions formed by the indented margins of the valves. Seeds solitary in each cell, roundish, compressed.

Eff. Ch. Calyx of five leaves. Corolla tubular; its limb five-cleft, with five vaulted scales between the segments. Stamina inserted into the top of the tube, under each scale. Stigma three-cleft. Capsule inferior, of three valves, and three cells formed by the indented valves. Seeds solitary, compressed.

Species 1. C. ericaeod. Leaves linear, acute. Corolla funnel-shaped, externally bristly. Sm. MSS. Stem fimbry, much branched, slender; the branches leafy, and clothed when young with silky hairs or bristles. Leaves a quarter of an inch long, falciculated, opposite, smooth, linear, acute, keeled, on short stalks. Flowers in dense, leafy, terminal heads, apparently reddish, clothed externally with white, silky, scabrous bristles. 2. C. amara. Leaves fimbriate, obtuse. Corolla bell-shaped, externally hoary. Sm. MSS. Stem fimbry, of humble growth like the foregoing, being about three feet high, wand-like, befet with numerous, alternate, short, leafy branches, clothed with short flary pubescence. Leaves falciculated and scattered, the length of the former, but fimbriate, obtuse, entire, smooth, on short stalks. Flowers about the fumarces of the branches, clustered, with one or two bracteal axillary ones, on very short stalks. Their colour seems to be internally reddish; their shape is campanulate and short, and they are clothed externally with close, white, hoary pubescence. Calyx brown. Every part of this species is bitter, especially the leaves. The young twigs have the flavour of Peruvian bark, Cinchona, and it is much to be wished that the plant should be submitted to chemical and medical experiment. It flowers in May.

Both species of Cryptandria grow in the neighbourhood of Port Jackson, New South Wales, from whence Dr. White long ago sent dried specimens to Europe. We have had any information of their introduction to the European gardens, but they both deserve cultivation for their elegance, having the aspect of Erica, or rather of some of the smaller kinds of Daphne. The flowers of the second species, being nearly closed, and therefore exhibiting only their white outside, look like little clusters of pearls, as has been remarked by those who have seen them growing wild. S.

CRYPTIA, i. e. the Ambuscade, in Grecian Antiquity, a cruel practice, subsisting among the Lacedaemonians, and by some ascribed to Lycurgus, of lessening the number of their slaves when they were thought to be too numerous. Such as had the care of the Spartan youth, selected the floutest of them, and having armed them with daggers, sent them out to destroy their unhappy slaves, either by forring them in the night, or falling upon them in the day, when they were at their work, and defenceless. Plato (de Legib. et de Republ.) condemns this law; and Plutarch (in Vit. Lycurg.) denies that it was made by Lycurgus; whereas Aristotle expressly lays it to his charge; but when ever or however it was made, it was undoubtedly a cruel and unnecessary expedient, in all respects unworthy of a virtuous people. See Helotes.

CRYPTOCEPHALUS, in Botany, a genus of the Coleoptera tribe, the antennz of which are fimbriate or feelers four in number; thorax margined; wing-cases emarginate, and the body sub-cylindrical. Gmelin. A number of the insects in this genus belong, in the Linnean system, to the Chryomelida tribe, from which they have been separated by Fabricius, and other late writers. The Fabrician character of the genus cryptocephalus is taken principally from the structure of the mouth; according to this writer they have five fimbriate feelers; the jaw furnished with a single tooth, the lip hairy and entire, and the antennae fimbriate. Most of the species described by Gmelin in this genus, appeared in the first instance in the works of Fabricius.

Species.

LONGIPES. Darkly-black; wing-cases pale, with three black spots; fore legs long. Fabr. Crya longipes. Laichart.

Found on the nut-tree in Germany. The antennz are short, ferrated, and black; dots on the wing-cases, dilated two in the middle, and one at the base; legs black.

3. PUNCTATUS. Blackish-blue; wing-cases telfaceous with three black dots; anterior legs long. Fabr.

Described from a specimen in the museum of Dr. Allioni; it is nearly allied to the last but smaller, and inhabits Italy.

SALICIS. Black and polished; wing-cases red with three black dots. Fabr.

Found in Saxony, according to Hybner. The antennz are black and short; head and thorax deep black, and without spots; wing-cases variable from red to telfaceous; body black.

6. NOTATUS. Deep black; wing-cases telfaceous, with two dots and line behind of black. Fabr.

A small species found in Barbary, and first observed by Fabricius in the cabinet of M. Desfontaines. The antennz are
CYPHTOCEPHALUS.

are long; thorax black and immaculate; wing-cases smooth; future black.

6-MACULATUS. Black, thorax red and immaculate, with three black dots. Fabr.

A native of Italy, in the cabinet of Dr. Allioni. 4-PUNCTATA. Black; wing-cases red, yellow, with two black dots; antennæ serrated. Fabr. Donov. Brit. Inf. Chryomela. 4-PUNCTATA. Linn. Melolontha, Geoffr.

Found on the nut-tree in Europe. 4-NOTATUS. Blue-black; wing-cases red with two blue spots; antennæ short. Fabr.

Inhabitants Barbary; legs black. Prof. Vahl. L.USTUS. Green-brown; wing-cases tesselaceous, with two black spots. Fabr.

Discovered by Hybrin in Saxony. The head is green, and brassy; thorax brassy, with tesselaceous margin; wing-cases smooth; body blackish, at the tip brassy; legs brassy, with the shanks tesselaceous.

ATRAPAXIDES. Black; thorax red, with three black spots; wing-cases tesselaceous, with three black spots; thanks rufous. Fabr. Chryomela Atraphaxides, Fabr.

A native of Siberia, preferred in the Bankian cabinet. The antennæ are serrated and cinereous; thorax rufous, with three contiguous spots at the base; legs rufous; thighs black.

LUNOLUS. Black, polished; wing-cases yellow, with a black bundle band, and dot at the tip. Fabr.

Described from a specimen in the Bankian cabinet; the native place unknown; antennæ short and serrated; body black.

12-MACULATUS. Black; thorax and wing-cases red, with four black dots on each. Fabr.

Native of the Cape. The antennæ are short, serrated, and rufous at the base; thorax rounded and smooth. Bankian Cabinet.

DORSALIS. Ferruginous; future black, near the tip ferruginous. Marth. Ent. Brit.

A small species found in Britain. MARGINELLUS. Black; margin of the head, thorax, and body, together with the legs, yellow. Donov. Brit. Inf. Discovered in Coombe wood, Surrey; rather larger than the last.

FRONTALIS. Deep-black and glossy; front, anterior part lateral; margin of the thorax, and wing-cases, with the legs yellow. Chryomela Frontalis, Marth. Ent. Brit.

OBELUS. Tesselaceous; antennæ and margin of the wing-cases black. Fabr.

A native of America. The antennæ are serrated, and black; abdomen cinereous fulvous.

LINEATUS. Reddish; thorax with two black spots; wing-cases with two black lines. Fabr.

Described from the Bankian cabinet, as a native of the Brazils.

TRIDENTATUS. Blue; wing-cases tesselaceous; dot on the shoulder black. Chryomela tridentata, Linn.

An European species found on the willow and poplar, and described by Fabricius in his Suppl. Ent. under the name of elytra tridentata.

TAXICORNIS. Blue; wing-cases tesselaceous and immaculate; antennæ serrated. Inhabitants Italy, Dr. Allioni. Very much resembles the last.

VENUSUS. Grey brown; two spots on the thorax, and margin yellow; wing-cases yellow with two black fillets. Described by Fabricius from a specimen in the collection of Dr. Hunter, obtained from America.

GORTERIA. Black and glabrous; thorax and wing-cases with four yellowish dots.

Inhabitants the Cape of Good Hope. Chryomela Gorteria, Linn. Amer. Acad.

3-PUNCTATUS. Black; thorax rufous; wing-cases tesselaceous, with four black dots. N. turf.

Found on plants in Barbary by professor Vahl. MAXILLATUS. Head and thorax fulvous; wing-cases yellow, with a black dot at the base; feebly black.

A native of the Cape of Good Hope; in the Bankian Cabinet.

ARISTUS. Deep-black, a yellowish spot on each side the thorax; thanks yellow. Herb. Chryomela aurita, Linn.

Found on the nut-tree in Saxony. LENTISC. Blue; wing-cases blood-red, with rough blue spots. Fabr. Chryomela variolata, Linn.

Inhabitants Africa, where it occurs on the lenticeps. Muf. Desfontaines.

DIDYMUS. Rufous, wing-cases with three black spots, the anterior one double behind. Fabr. Donov. Inf. New Holland.

Discovered in New Holland by sir Joseph Banks. 4-MACULATUS. Rufous; head at the base, and two spots on the wing-cases, blue. Fabr. Chryomela 4-maculata, Linn.

A native of Germany, and feeds on the nut-tree. FLAVICOLLIS. Black; thorax fulvous with six black dots; wing-cases pale, with two dots. Fabr.

A Siberian insect, described from the Bankian cabinet. LONGIMANUS. Dull-brassy; wing-cases tesselaceous with a black dot at the base. Fabr. Chryomela longimana, Linn.

Inhabitants Sweden, on the trifolium montanum.

LAR. Rufous; wing-cases fulvous glossed with blue; anterior legs elongated.

A native of South America. The wing-cases furnished with dots.

MARGINATUS. Brassy-black, with yellow wing-cases; margin black. Fabr. Cryptobrachinus phaleratus, Act. Hall.

Found on plants in Europe, chiefly Germany.

PUBESCENTS. Thorax and elytra dull-brassy and pubecent. Fabr.

An American species. The body is entirely covered with cinereous down; feebly black.

2-PUNCTATUS. Black and polished; wing-cases red, with two black dots; antennæ length of the body. Geoffr. Chryomela 2-punctata, Linn.

This and the following species inhabit Europe, and feed on the nut tree.

LINEOLA. Deep-black and glossy; wing-cases red; line in the middle black; antennæ length of the body.


Inhabitants Italy, Dr. Allioni.

CORDIGER. Thorax variegated; wing-cases red, with two black dots. Geoffr.

An European species, found on the nut and willow.

BOTHNICUS. Deep-black; a longitudinal red line on the thorax. Fabr. Chryomela botnica, Linn.

A native of Sweden.

FRENATUS. Deep-black; head, thorax, and legs rufous; two black dots on the thorax. Fabr.

Found in Austria, and nearly allied to the former; head rufous, with the posterior margin black.

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Obscurus. Dusty-black; p. n. f. r. ir legs elongated. 
Fabr. Chryso mel a olivacea, Linn. Mast. 
An European species; feeds on various plants. 
Vitus. Gloomy-black; thorax globoso; wing-cases rufous. 
Geoffr. 
A species extremely destructive to the vine in the south of Europe. 
Coryllus. Black; thorax and wing-cases tesselaceous; 
future black. Fabr. Chryso mel a coryl, Linn. 
Plagiopropus. Black; thorax and wing-cases tesselaceous; head thickish. Fabr. 
Found in the south of France according to Schled. It bears some affinity with the species coryli, which also inhabits Europe. The antennae are short, ferrated, and black; head thick, prominent, and black; ficial black. 
Hypobius. Black with cinereous hairs; thorax and wing-cases pale. Fabr. 
Described from a specimen received by Dr. Pflug, from China. 
Variegatus. Black; abbreviated dorsal line, and margin of the thorax red; wing-cases tesselaceous. Fabr. 
A native of Italy. Dr. Allioni. The head is black with a yellow dot between the antennae; legs black. 
Tribiscatulus. Above tesselaceous; band on the thorax, and three on the wing-cases black. Fabr. 
This, according to Dr. Pflug, is found in China; the head is black, with a large frontal tesselaceous spot, and the body black. 
Ruficolis. Black; thorax rufous; wing-cases tesselaceous; anterior legs long; thighs armed with a single tooth at the tip. Fabr. 
A specimen of this species found at St. Helen's is preferred in the Bankian cabinet; it has also been met with by proctor Helwig in Italy. The antennae are thick and much ferrated; legs tesselaceous; thighs marked with a black line. 
Nigerus. Head and thorax rufous; wing-cases pale, legs black at the tip. Fabr. 
A native of America. The antennae are black with the base rufous. 
Inhabits plants in Europe. 
Cerulianus. Glossy-blue; antennae fuscous. Fabr. 
Described from an African specimen in the Bankian cabinet. The antennae are short and ferrated. 
Violaceus. Black-blue; antennae and legs black; wing-cases somewhat ferrated. Fabr. 
Inhabits Germany. Same size as the last, but has the antennae black, and not ferrated. 
Found in Cayenne, Von Rohr. The under surface is dusky. 
Rubrifrons. Blue, and glossy; front with the band on the thorax, and the thighs red. Fabr. 
Native place unknown. The antennae are fuscous with the base rufous. 
Calcaratus. Violaceous; head, thorax and thighs dentated and rufous. Fabr. 
Inhabits Sierra Leone. Bankian cabinet. 
Lobatus. Dusty-blue, with the posterior flanks lobate at the tip. Fabr. 
Found by Hübner in Hungary. It is of a middle size; the antennae black, with the base tesselaceous; head and thorax blue; wing-cases dusky. 
Rufipes. Blue or green, and glossy; legs rufous. Fabr. 
Native of the Cape of Good Hope. Bankian cabinet. 
Found in France by Mallet. 
Cinctus. Head and thorax rufous; wing-cases black; margin rufous. Fabr. 
Described as a native of South America from a specimen in the Hunterian collection. 
Ducalis. Blue, mouth, margin of the thorax, and the legs red. Fabr. Chryso mel a ducalis, A. H. 
Inhabits the Anthyllis vulneraria in Saxony. 
Collaris. Blue, and glossy; sides of the thorax, tips of the wing-cases, and the tinges red. Fabr. 
Native of Siberia. The antennae rufous at the base; body black; legs and thighs rufous. 
Found on the willow in Europe. 
Nipotus. Gloomy-green; mouth and legs tesselaceous. Fabr. Chryso mel a nitennis, Linn. 
An European insect; found on the nut tree. 
Glabratus. Violaceous; thorax and wing-cases brazi; antennae fuscous. Fabr. 
Inhabits Brazil. The antennae are fuscous with the base ferruginous; wing-cases smooth; beneath entirely violet. 
Limatus. Ferruginous with rufous thorax; future of the wing-cases glossy-blue. Fabr. 
A native of Camerone. Schulz. 
Nitidulus. Thorax polished brazi; wing-cases blue; head, antennae at the base, and the legs yellow. Fabr. 
Found in the southern part of Russia. Bocker. The wing-cases are somewhat punctated; body black. 
Labiatus. Black and glossy; mouth, legs, and antennae at the base, yellowish. Fabr. Chryso mel a labiata, Linn. 
An European species; found most commonly on the rofe. 
Vittatus. Black; margin of the wing-cases, and abbreviated t. i. p. e. yellow. Geoffr. and Schaffer. 
Found on graminiferous plants in the south of Europe. 
Flavilabiatus. Violaceous, and polished; mouth polished; antennae and legs black. Fabr. Cryptoccephalus parvulus, Mill. 
Inhabits the alder in Saxony, Schaller. The wing-cases are marked with dotted lines. 
Found in Italy by Dr. Allioni. 
Flavifrons. Blue-black and polished, front and legs yellow. Fabr. 
A native of Germany, about Kiel. 
Hübneri. Black; head and wing-cases at the tip, and the legs yellow. Fabr. 
Found by Hübner in Germany. 
An European species. 
Met with on the ash in Saxony by Hübner. 
15. Guttatus. Rufous; three spots on the thorax and fix on the wing-cases, yellow. Fabr. 
Inhabits Brafl. The antennae are black, with the base yellowish; anterior thighs marked with a yellow spot. 
CRYPTOCEPHALUS.


Native of Europe. The head is telleaceous, with the posterior margin black; legs yellow, with the thighs of the hinder legs black.


Described as a native of Germany, from the cabinet of Leuenfield.

Halmoeromalus. Blue; tip of the wing-cafes and legs fulvous. Fabr.

Found in France, near Peris; Boce.


Punctatus. Rufous; two spots on the thorax, and two bands on the wing-cafes black. Fabr.

Native of Africa.


Inhabits Sweden.

Notatus. Black; wing-cafes ftriated with dots; band and spot at the tip telleaceous. Fabr.

Found in America. Mu. Dr Hunter.

Herbst. Black; thorax and wing-cafes varied with ferruginous; legs ferruginous, joints black. Fabr.

Native of Italy. The head is black; orbits rufous; thorax black, with ferruginous margin, and three abbreviated lines; wing-cafes punctured with ferruginous spots at the tip.

Scolopil. Black; thorax rufous; wing-cafes rufous, with two blue bands; legs black. Panz. Chrysoloma festivum, Linn.

Found in Germany, and the southern parts of Europe.

Koenigii. Rufous, with two blue spots on the wing-cafes. Fabr.

Discovered in Tranquebar by Dr. Koenig.

Paracenthesis. Wing-cafes yellow, with small line and three dots black. Chrysoloma paracenthesis, Linn.

Found on the willow and elder in Europe.

Hemid. Brassy, and polished; front coppery. Fabr.

Inhabits Barbary. The antennae are ftriated and black; anterior legs elongated.

Cyanocorius. Brassy-green, and polished; antennae yellowish at the base; front imperfect. Fabr.

A native of Europe.

Pini. Telleaceous; wing-cafes pale and irregularly punctured; antennae fulvous. Chrysoloma pini, Linn. Fn. Suec.

Inhabits the pine, and is chiefly found in Sweden.


A native of Ceylon. The head is telleaceous, with the orbits of the eyes white; thorax white, with four telleaceous lines; breath black; abdomen and legs yellowish.

Pusillus. Thorax fulvous; wing-cafes ftriated, telleaceous, and spotted with black. Fabr.

Half the size of C. pini. The head is fulvous; the antennae pale; eyes black; wing-cafes with two dots at the base, and a black band behind; body black; legs pale.


Inhabits Germany, near Kiel.

Gracilis. Deep black; head and thorax fulvous; wing-cafes with a white marginal line and base. Fabr. Geoffr.

A small species. The antennae black, with the base rufous; thorax rufous and immaculate; legs rufous.

Pygmaeus. Deep-black and polished; wing-cafes telleaceous; future black.

Found in France by Boce. This insect is very small; the head is black, with the front yellow; thorax at the anterior margin and sides yellow; wing-cafes ftriated; body black; legs yellow.

Biguttatus. Black; head, tips of the wing-cafes, and legs yellow. Geoffr.

A native of Saxony.

Cassimilis. Black; head with two yellow spots; antennae and front legs yellow. Herbst, &c.

Inhabits Prussia, near Berlin.

Orientalis. Black; head with a bilobate fulvous spot; thorax with a yellow line and margin. Herbst.


Found in India.

Laticlavius. Black; head, thorax, and wing-cafes rufous; future and edge of the wing-cafes black; antennae frrinated. Fourt. Nov. Inf.


This and the two following are natives of Russia.

L. Notatus. Thorax and wing-cafes yellow, with four black dots on each. Lepech.


Mulleri. Black, and downy; wing-cafes with two red dots. Mulli.

A native of Denmark.

Muscididormis. Green-blue; thorax red with a blue spot; thanks ferruginous. Geoff.

This, and the five succeeding species, are natives of France.

Virex. Black; wing-cafes ftriated, red with a black margin, and four spots. Geoffr.


Parisinus. Black, frriated; legs rufous. Geoffr.

Erythreus. Black, ftriated; thorax and legs red. Geoffr.

Fulvis. Head and thorax fulvous; wing-cafes pale. Geoffr.

Ferruginosus. Black and polished; antennae twice as long as the body; wing-cafes with a yellow spot at the tip. Schrank.

Multicolor. Wing-cafes yellow with two scarlet bands. Hornilt.

This is a native of Java. The thorax is red; abdomen black at the tip.

Sumatratus. Wing-cafes yellow with a chefsnut spot in the middle. Hornilt.

Coffea. Thorax with a tranverse groove; abdomen green; wing-cafes yellowish. Hornilt.

Inhabits Bantam, on the coffee, the berries of which it resembles in size and appearance, as well as colour.

Orientalis. Yellow, thorax rufous with a transverse groove; wing-cafes black-blue. Hornilt.

Inhabits the East.

Bataviansis. Head, thorax, and wing-cafes, with the legs livid. Hornilt.

Inhabits Java.

Javanus. Black; thorax, and wing-cafes red spotted with black; antennae black, with the bale rufous. Hornilt.

Inhabits Java.

Cyanocephalus. Head, margin of the thorax; shell, bale
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bale and tip of the thighs violet; crown and thorax scarlet. 

Lefk.

Flatiprons. Black, polished; front, mouth, legs, base of the antennæ and edge of the shell yellowish. Lefk.

Fuscatus. Brown; head, thorax, and shell violet; the latter deeply punctured. Lefk.

Ochrocephalus. Black; head, antennæ, and wing-cases yellow; the latter with four black dots and one at the tip. Lefk.

Chrysopus. Black, glabrous; wing-cases punctured in frize; head, tips of the wing-cases and legs yellow. Suturalis. Black, glabrous; wing-cases yellow, with black future, and fillet connected at the tip. Lefk.

The first preceding species are natives of Europe.

† Cryptcephalus, Gmelin.—Cijlela, Fabr.

Lip bifid; Body obtuse.

Cervinus. Livid; legs fusaceous. Chrysoneola cervina, Linn.

Found on plants in Britain and other parts of Europe.


Cinerus. Livid; wing-cases and legs brown. Cijlela cinerea, Fabr.

Found in Germany, and considered by Helwig to be a variety or sexual difference of the other.

Lievus. Livid; antennæ fusaceous. C. lividus. Fabr.

Described from a specimen in the Bankian cabinet taken at Terra del Fuego.

Ceramobius. Black; thorax narrowed before; wing-cases frayed and tesselaceous. Herbit. Mordeilla, Geoff. Inhabits Europe, chiefly the northern parts.


Tetras. Black; thorax, wing-cases, and abdomen tesselaceous. Cijlela tesselata, Fabr.

Inhabits Barbary, on the chrysanthemum.

Pictus. Black; thorax square; wing-cases tesselaceous; antennæ and flanks pitchy. Found on plants in Denmark. Schelldt.

Sulphures. Yellow; wing-cases sulphaceous. Chrysoneola sulphurea, Linn. Tm. sulphurea, Geoff. Feeds on unblattaceous plants, in Europe.

Ruficolus. Deep-black; thorax tesselaceous; wing-cases frayed. Fabr.

Inhabits northern Europe.

Bicolor. Black; wing-cases and legs sulphaceous.

A native of Germany.


Nigrifemur. Ferruginous; head, and frayed wing-cases black. Fabr.

Inhabits southern France.

Analis. Reddish; antennæ, spot on the wing-cases, and the tail, black. Fabr.

The spot on the wing-cases is situated at the base, and in some specimens there are two spots on each wing-case, one at the base, the other at the tip. Found by Dr. Koenig at Tranquebar.

Rufipes. Black; wing-cases smooth; antennæ and legs ferruginous. Fabr.

A native of Germany.

Pallipes. Black; wing-cases frayed; legs ferruginous. Fabr.

Inhabits the same country as the preceding.

Varians. Grisous; eyes black; wing-cases somewhat frayed. Fabr.

Inhabits Saxony, and is rather smaller than the following species.

Munimus. Black; wing-cases frayed, and with the legs tesselaceous. Herbit. Chrysoneola murina, Linn.

Ferrugineus. Tesselaceous; head and thorax fusaceous; wing-cases frayed. Cijlela ferruginea, Fabr.

Thoracicus. Fusco; thorax and legs ferruginous; wing-cases smooth. Cijlela thoracica, Fabr.

Inhabits Saxony. Hybner.

Flavipes. Black; wing-cases dusky, with a yellow spot at the base; base of the abdomen, and legs yellow. Fabr.

Described from the Bankian cabinet; the native place unknown.

Evonym. Tesselaceous; abdomen greyish; wing-cases smooth. Fabr.

Inhabits Germany, on the evonymus.

Humeralis. Black; dot at the base of the antennæ ferruginous. Fabr.

Found by Hybner in Saxony.

Maurous. Black; wing-cases subfrayed; base of the antennæ and legs ferruginous. Cijlela mauro. Fabr.

Pallipes. Black and polished; base of the antennæ, and legs pale. Fabr.

A native of Germany.


Found in Sweden, Paykull.


Inhabits Britain. The head is black; antennæ brown; legs ferruginous. Fabr.

Pallidus. Pale; head and tips of the wing-cases brown. Cijlela pallida, Fabr.

Found in Britain.

Aeruginus. Yellow; head and breast black; wing-cases greenish. Cijlela aeruginus, Fabr.

An African insect; met with on the flowers of the aeschynomone, to which it is extremely destructive.

Festivus. Ferruginous; wing-cases blue-green, with ferruginous margin. Cijlela festiva, Fabr.

Inhabits the Cape of Good Hope.

Aulis. Black; thorax rufous; wing-cases blue. Fabr.

Found in the same country as the preceding; the segments of the abdomen are rufous at the edges.

Stittata. Tesselaceous; margin of the wing-cases, and stripe in the middle black. Fabr.

A native of Carolina, in the cabinet of Mr. W. .

Hirtus. Hairy; head and thorax rufous; wing-cases blue. Cijlela hirta. Fabr.

Inhabits the Cape of Good Hope.

Pubescens. Pubescent; grey; head and abdomen fusaceous. Fabr.

Found in Denmark. The antennæ are ferrugineous at the base; future of the wing-cases blackish; body dark; legs grey.

Sex-Lineatus. Ferruginous; wing-cases yellow, with three small black yellow lines. Cijlela sex-lineata, Fabr.

Described from the Bankian cabinet; native place unknown.

Alpinus. Black, polished; wing-cases chestnut, and wrinkled, with the future black. Moll.

Inhabits Alpine parts of Europe.

Strigatus. Reddish; abdomen black; front with two, thorax three, and wing-cases four black bands. Sulz.

This,
This, and the eleven succeeding species, are found in Europe.

**Forsteri.** Subvillous, brown, with longitudinal interrupted blackish bands. Schaff.

**Pustulatus.** Black, oval; wing-cases with a russet waved spot. Forst. Nov. Inf.

**Denigratus.** Entirely shining black. Ford.

**4-Fasciatus.** Sub-oval; black; with frilled wing-cases. Ford.

**Holosericus.** Oval; brown-green; wing-cases with longitudinal interrupted dusky bands. Ford.

**Capucinus.** Ferruginous; head, thorax, and wing-cases brown, the latter with crenated fricis; antennae and legs ferruginous. Müf. Leck.

**Consensus.** Above covered with yellowish dust, beneath sprinkled with slivery; antennae brown; legs rufous brown. Leck.

**Sulphuratius.** Brown; antennae, legs, and shells sulphur; ends of the legs brown. Leck.

**Truncatus.** Brown; wing-cases smooth; antennae and legs reddish yellow; thorax truncated behind. Leck.

**Brunnus.** Brown; abdomen dark brown; wing-cases smooth. Leck.

**Rufitarsius.** Oblong; head, body, antennae, and legs, brassy-black and hairy; wing-cases tettacous, punctured; tarsi rufous. Leck.

Inhabits near Lisbon.

**Cryptophthalmus.** Gmel. Crioceras, Fabr.

**Bituberculatus.** Fulvous; wing-cases pale, surrounded with a fulvous margin. C. tuberculatus, Fabr.


**Bidentatus.** Yellow; wing-cases black; with the tip reddish. Same country as the preceding.

**Melanophalax.** Rufous; head black; wing-cases violet.

A native of New Holland. Antennae black; frons rufous.

**Lunulius.** Black; thorax pale; lunule, on the wing-cases, margin and two bands pale. Inhabits Cayenne. Antennae black in the middle; body black; abdomen and legs pale.

**Ochraceus.** Tettacous; dot on the thorax and abdomen black; tail fulvous. Herbl.

**Ochretius.** Tettacous; breast and hands black. Found in Guadaloupe.

**Lapponicus.** Black; margin of the wing-cases, antennae, and legs yellow. Inhabits Lapland, on the birch.

**Nigratus.** Ferruginous; antennae, breast, and base of the abdomen black; thorax cylindrical, impressed each side.

Native of Germany.

**Nigripes.** Thorax cylindrical, yellow; antennae, breast, and legs black. Inhabits New Holland; antennae black.

**Oculatus.** Thorax cylindrical, yellow; wing-cases black at the base, with a yellow dot.

Inhabits the same country as the last; the antennae are yellow, and as long as the body; wing-cases slightly frilled; breast and thighs black.

**Melanopus.** Blue; thorax and legs rufous. Sulz.

A native of Europe.

**Violaceus.** Black-violet; wing-cases frilled.

Inhabits near Paris; body oblong and flat.

**Aquaticus.** Head and thorax tettacous; wing-cases reddish-brown, with the margin, line at the base, and band in the middle yellow.

A native of Cayenne; antennae and legs yellowish; body black.

**4-Maculatus.** Thorax rufous; wing-cases tettacous, with two black spots.

In the southern parts of Germany. The head is black; antennae tettacous; abdomen black; breast and legs tettacous.

**Parvus.** Brown; two spots on the head; antennae fulvous at the base.

Inhabits the vicinity of Berlin. Herbl.

**Tristis.** Black; wing-cases blue, with friz of punctures; legs fulvous.

Native of Austria. Herbl.

**Tricolor.** Black; thorax cylindrical, gibbons at the sides; head, future, and margin of the wing-cases ferruginous; wing-cases tettacous; legs, antennae and feelers reddish yellow. Leck.

**Gibbus.** Thorax cylindrical, gibbons at the sides; head, thorax, and legs reddish-yellow; wing-cases black, and deeply punctured.

A native of Europe.

**Ochropus.** Black; wing-cases brown; thorax, base of the antennae, and legs yellow; thighs brown at the base. Leck.

Inhabits Europe.

**Aquatius.** Black; thorax spotted; maroon, broad future of the wing-cases, and the legs yellow. Mull.

Inhabits Denmark.

Besides the above, Gmelin includes in his genus cryptocoele, the three Fabrician genera crotalus, ligeris, and aurotaurus; which he respectively.

**CRYPTOCAMIA, in Botany, (from κρυπτος, secret or hidden, and γάμος, marriage,) the twenty-fourth and last class of the sexual system of Linnaeus, formed for several very numerous families of plants, in which the parts essential to their fructification have not been sufficiently ascertained, or are too small to admit of their being accurately described and referred to any of the preceding classes. It is divided by Linnaeus into four orders, Filices, Musci, Algae, and Fungi. See these words. The order Hepaticae has been added since. Mr. Kirwan, and some other geologists, have maintained, that plants of this class and of the culmiferous kind are frequently found on the bottom of lakes, which alternate with coal, but the whole of such vegetable remains seems, when minutely examined, to belong to no known genera, but to belong to the incrinita of a former vegetable race, probably sub-aqueous. See Collyry.

**CRYPTOGRAPHY,** the art of secret writing, or writing in cipher. See Cipher and Deciphering.

The word is compounded of κρυπτος, I hide; and γάμος, I describe.

**CRYPTO-PORTICUS.** This word, taken etymologically, means a dark subterraneous gallery; see the article Crypt.

If we were to judge (says Winckelmann) by the remains of antique edifices, and particularly by those of the Villa Adriana at Tivoli, we might be led to believe that the ancients preferred darkness to light; for in fact we find scarcely any chamber or vault among these ruined edifices which has any appearance of windows. It seems probable that in some the light was only admitted through an opening in the middle of the vault, but as the vaults are generally fallen this point cannot be ascertained.

The inhabitants of Italy were naturally attached to the shade

Gen. Ch. Cal. Periath one-leaved, funnel-shaped, swallen at the base, coloured with a five-cleft border; segments lanceolate, acute, unequal. Cor. Monopetalous, funnel-shaped; tube very short, inserted into the throat of the calyx; border five-cleft; segments lanceolate, acute, unequal, converging. Nectary broad, arched, five-toothed, adnate to the base of the corolla and closing its mouth. Stam. Filaments none; anthers five, each of them attached to one of the teeth of the nectary. Fil. Germ roundish, in the bottom of the calyx; fylle cylindrical, the length of the calyx; stigma capitate. Per. Berry dry, globular, three-celled. Seeds one in each cell, egg-shaped, acute, marked with a large bilum or fear. Eff. Ch. Corolla funnel-shaped, inserted into the calyx. Nectary one-leaved, cloving the corolla. Berry dry, three-celled, with one seed in each cell. Obf. Jussieu calls the nectary a five-toothed filament.

Sp. C. laurefolium. (C. guianense; Gmel. Montb. Aubl. guian. 2. 680.) A bulky shrub. Stems several, five or six feet high or more, branched. Leaves alternate, nearly lefllie, elliptical, entire, acuminate, smooth. Flowers white, four or five in a cluster on a short axillary peduncle, sweet-scented. Berries yellow. Seeds resembling an almond, eaten by the Créoles. A native of Cayenne and Guiana.

CRYPTUS, in Ancient Geography, a port of Arabia Felix, placed in the tr aft of the Peruvian gulf.

CRYSTAL. CRYSTALLOGRAPHY, in Chemistry. The Greeks called ice crystal, κρυστάλλος, from the remarkable facility with which it liquefies. By the Roman naturalists the same term was afterwards applied to the substance at present named rock-crystal, because, from its colourless transparency, and from its being procured among the Alps and other cold mountainous regions, it was supposed to differ from common ice only in being more indurated by long continued frosts, and therefore more permanent. But the symmetrical figure of rock-crystal, consisting of a fix-fided prism terminated by six-fided pyramid summits, is equally remarkable as its lustre and transparency; and as soon as it was observed that nitre and certain other salts were also capable, by particular management, of exhibiting a similar prismat ic form, the word crystal assumed a more general meaning, and was applied to all those regular polyhedral transparent solids which are preferred to our notice by nature or art. In this sense the word is employed by the old chemists, and the crystalline form was considered as peculiar characteric of saline substances. By degrees it was found that the same tendency to symmetrical arrange-
the crystalline polarity of the substance dissolved. The simplest solvent that can be employed is caloric, and many great advantages attend its exclusive use. A number of cases, however, occur, in which its application is impossible, except in combination with some liquid menstruum, as water or alcohol.

Solids that are safely volatilized, without decomposition, at a moderate temperature, may be obtained in a crystalline state by gradual sublimation in close vessels. Thus, when grey oxal of arsenic is exposed to a low red heat, the aggregation of its integral molecules is destroyed, and it is converted into a vapour, which at the same, or any higher temperature, would continue in a permanent effusive state. This is the first part of the process, namely, the separation from each other of the integral particles of the arsenic, in consequence of the addition of caloric, which interposes itself between them. The second part of the process, or the formation of crystals, depends on the tendency to an equilibrium, by which heat is characterized, and its being able to pass with readiness through media that are impenetrable by other bodies. When, therefore, the vapour, consisting of caloric and oxal of arsenic, arrives in the upper part of the vessel, the caloric passes through, like water through a filter, while the oxal of arsenic is left behind; this latter, therefore, is continually increasing in proportion to the remaining caloric, till the crystalline polarity of the particles of arsenic becomes superior to the attraction of the caloric. As soon as this takes place, a stratum of particles begins to be deposited on the inner surface of the containing vessel, and these serve as a basis, to which all the succeeding ones attach themselves, according to their peculiar mode of arrangement, in proportion as their crystalline attraction becomes superior to the affinity exerted by the caloric. In this way not only are volatileizable substances, when unmixed with others, obtainable in a pure crystalline state, but they may often be separated hereby from intimate mixture or combination with bodies of greater fixity. Thus, benzoic acid is separable in a crystalline form from the retn with which it is naturally combined, by taking advantage of its ready volatility at a moderate heat; thus, also, the manufacturers of sal-ammoniac separate this salt from sulphur of soda, and procure it of a crystalline texture by the application of a heat sufficient to sublime the former, while it has no such action on the latter.

Bodies may be made to assume the crystalline state, not only by the process of sublimation, but in many cases by a temperature only sufficient to fuse them. Thus, if we melt in a crucible a quantity of bisnith, or antimony, or sulphur, and afterwards cool it as slowly as possible, till a thin crust has formed on the surface, and then, by means of a pointed iron, pierce two small opposite apertures through the crust, and quickly pour out by one the still fluid portion while the air enters by the other, there will appear, on removing the upper crust, by means of a chisel, a cup-shaped hollow, filled with crystals, which will be more or less perfect, according to the magnitude of the original mass, the flowers with which it has been cooled, and the dexterity with which the fluid part has been evaporated.

There are, however, but few chemical substances, comparatively, that can be obtained in a crystalline state by the agency of heat alone; for some are decomposable by fire, and others are either insoluble, or require such a high temperature for this purpose, as to make its application exceedingly troublesome and inconvenient. In effecting the crystallization of nearly the whole of the compound salts, and a few other bodies, recourse has been principally had to the agency of water and alcohol, as these two fluids exert a considerable solvent power on the substances exposed to their action, without however decomposing them; and being themselves readily volatile, at a moderate temperature, they may be abstracted with sufficient facility to allow the substances held by them in solution to be deposited in their crystalline form.
C R Y S T A L.

sulphat of pot-ash, which requires a large quantity of water to counterbalance the cohesive force of its particles, contains but little water of crystallization; whereas sulphat of soda, which is readily soluble in water, holds more than half its chemical weight of this fluid. This water appears to be in a state of combination with the salt, and not simply interposed between its laminae: the affinity however which it exerts, is but feeble, at least in those salts into the composition of which it enters largely, since a considerable proportion of it is driven off merely by exposure to the air. In these cases, the crystall moulds away to powder, and entirely loses its peculiar form and texture.

If a crystallizable salt is perfectly pure, its solution will continue to afford crystals by the common treatment to the very last drop; but as all salts have a greater or less chemical action on each other, it usually happens, when two or more co-exist in the same solution, that after crystals have been obtained by successive evaporations and coolings, the remaining portion of fluid, though changed to fusturation with saline matter, refuses to yield any more crystals. This liquor, whatever may be the nature of its contents, is known by the general appellation of mother water. Those faults, the crystals of which are permanent in the air, have the strongest degree of crystalline polarity; in those which are efflorescent, this force is considerably less, but it is the weakest of all in those that deliquesce on exposure to the air. Now, if two salts are dissolved together in the same quantity of water, provided they do not decompose each other, and especially if their ratios of solubility are different; although they are rendered more soluble by their mutual affinity, yet they may be obtained again in the crystalline state without leaving any mother water. Thus, equal parts of nitrat of pot-ash and sulphat of pot-ash, though soluble when mixed together in less water than would have been necessary for both separate, afford by evaporation, successively, and in proportion to their solubility, first sulphat of pot-ash, and then nitrat of pot-ash, without leaving any uncrystallizable liquid. But on the other hand, if nitrat of soda, and sulphat of soda are subjected to the same experiment, both of which have only a slight tendency to crystallize, and are of nearly equal solubility, only a small quantity of sulphat of soda will separate by crystallization, all the nitrat and the remainder of the sulphat remaining liquid and uncrystallizable. When the mutual action of the two salts is sufficient to effect a double decomposition of them, it is necessary to take into consideration the solubility of the new salts, in order to make a correct estimate of the quantity of uncrystallizable residue. Thus, if equal parts of sulphat of magnesia and muriat of soda are mixed together, although the ratio of solubility of the two is different, and their force of crystallization also considerable, yet the liquor can hardly be made to yield any crystals at all; for in consequence of the mutual decomposition, muriat of magnesia, a deliquescent salt, and sulphat of soda, an efflorescent one will be formed; and the flight crystalline force of the latter will be almost wholly annulled by the extreme solubility of the former.

In many instances, the disturbance occasioned by evaporation and other causes of agitation, prevents the formation of regular crystals. But though this is the case, it does by no means follow that the entire absence of external motion is peculiarly favourable to crystallization. The solutions of those faults that are much more soluble in hot than in cold water, and have but a feeble power of crystalline polarity, may, if kept still, be cooled by degrees considerably below their congruing or crystallizing point, and still retain their fluidity; apparently because the attraction of their particles, in itself feeble and opposed by the affinity of the water, is held in equilibrium because no one particle has a preponderating power over those in its vicinity; for if a piece of the same kind of salt that is contained in the solution, be introduced, even with the utmost precaution, the inferior attraction of the mass will expose itself exerted on the adjacent particles, and a rapid growth of crystals will take place, radiating from the mals as their center of attraction. Crystallization may also be induced in similar circumstances, merely by agitation, but when this is the case, it is always confined a'd irregular.

Although several varieties of form in crystals had been observed by chemists and naturalists, yet they were rather objects of vague curiosity than of scientific attention, before the time of Lieusent. This able man, who aspired to be the classificer and lexicographer of the whole terrestrial world, observed a resemblance more or less perfect between the forms of various salts, and of several of the native crystallized minerals. The faculty of crystallizing he considered as peculiarly characteristic of saline substances, and hence concluded that all the crystallized earthy minerals were compounded of earth and some particular salt, to the latter of which was owing their external figure. Hence, because both nitre and quartz crystallize in the form of hexahedral prisms, terminated by hexahedral pyramids, he considered the former as the type of a whole genus, of which the latter was one of the species. So again, observing that alum and the diamond crystallize in pyramidal octahedrons, he arranged the latter as a species of the genus alum. The principal foundation of this theory, namely, that the particular forms of earthy crystals are owing to the presence of a salt, was soon after demonstrated by Wallerius and others, to be wholly groundless, yet the hypothesis, however erroneous, had already induced mineralogists to pay more attention to the forms of crystals than they had heretofore been accustomed to do, and thereby prepared the way for the more important discoveries of Rome de Lisle.

It was in consequence of the minute, ingenious, and multiplied labours of this able philosopher, that crystallography first assumed the appearance of science. He accurately examined all the crystalline forms that fell under his observation, delineated them with accuracy, ascertained the measurement of their principal angles, and arranged them with great facility, into species and varieties. Out of the various forms which each species exhibited, he selected one, which, from its simplicity, appeared to possess the fairest claim to be considered as the primitive form of the species; and from this, by supposing it truncated in different directions, he deduced, in a most ingenious manner, a regular gradation through the leaf to the most complex of the forms belonging to each species. He also made the interesting discovery, that the principal of the angles formed by the incidence of the circumferencing planes on each other, are always of the same dimensions, notwithstanding the truncatures and other modifications undergone by the primitive figure; and also that the dimensions of these angles vary in every different species, although the general figure of the crystals may be the same. Thus, having ascertained that the primitive crystalline form both of alum and nitre, is the pyramidal octahedron, composed of two four-sided pyramids united at their bases, he found that the two species might be accurately distinguished by the incidence of the corresponding planes of the two pyramids on each other; the amount of this angle in the octahedrons of alum being constant 110°, and in those of nitre 125°.

The great objection to the system of Rome de Lisle is, that the forms which he has selected as the primitive ones...
in each species are not demonstrated, but only presumed to be so, on account of their simplicity. The whole theory of truncatures also is allowed by the author to be merely hypothetical, or rather to be wholly different from the method pursued by nature in the formation of crystallts, there being no example of any one variety of these being ever produced by the actual truncation of the primitive figure. In consequence of these objections, Bergman was induced to suppose, that the varieties in crystallization are not owing to truncations of the primitive figure, but to the superposition of secondary laminae upon its faces, either in regular, or variable and decreasing proportions. According to this hypothesis, it would follow, that if the external lamina of any crystals were taken off in regular succession, the remaining nucleus would be constantly approaching to the primitive form, and would at length actually arrive at it. This Bergman demonstrated to be the case with that variety of calcareous spar called dog-tooth spar, by an actual division of the crystal; he discovered the various directions of the crystalline lamina of which it is composed, and by removing these in succession, he arrived at a rhombohedral form, divisible only by planes parallel to its surfaces, and therefore unsusceptible of undergoing any further change of form. But in an attempt to apply this brilliant discovery to another variety of calcareous spar, he was not equally successful as at first, and appears to have proceeded no further in the investigation of the subject.

Much about the time of Bergman's discoveries, M. Haüy had begun to investigate the same subject; he only appreciated the discovery of the Swedish philosopher, adopted his fundamental proposition, and by a most masterly combination of algebraical and geometrical reasoning, with unparallelled dexterity in the division of crystals, he has produced a theory of their formation most remarkably beautiful and consistent, and which has been applied by him with the happiest success, in the resolution of the most intricate figures, and the reduction of them to the most simple primitive forms. We shall therefore conclude this article by a detailed view of M. Haüy's Theory of the Structure of Crystals.

The mechanical division of crystals is the only method by which their primitive forms can with certainty be determined; and from the results of a multitude of these divisions, the following general conclusion (subject to certain restrictions, which will be hereafter mentioned,) may be deduced: that all crystals belonging to the same species, (that is, which have the same chemical composition,) however great may be the difference of their external figures, are reducible by the successive abstraction of their laminae to one and the same primitive form. This will best be illustrated by a few examples.

Take a regular hexahedral prism of calcareous spar, (Crystallography, Theory of, Plate I. figs. 1, 2.) If an attempt is made to divide this, upon the edges adjacent to the bases, it will be found that only three alternate edges at the upper extremity of the crystal, represented by the letters A, B, D, will admit of being thus divided: it will also be found that only three alternate edges at the lower extremity can be divided, and that these edges instead of corresponding with those of the upper extremity are, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, which are represented in fig. 2. namely, A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, such as are in the plane of the paper. Each of these planes will exhibit a degree of pout and lustre, by which it will be readily recognized as the area of one of these crystalline laminae of which the whole form is composed; and if the prism is divided in any other direction, it will be evident, from the roughness and dulness of the fractured surface, that such division does not correspond with any of the natural joints of the crystal. The division of the crystal being continued in a direction parallel to the first sections, it will happen, on the one hand, that the areas of the bases will be continually diminishing, at the same time that the height of the lateral faces will be diminishing, and where the bases are completely obliterated the prism will have been converted into a didodecahedron, with pentagonal faces, fix of which, as OKl, OKii, &c. are the residues of the original faces of the prism, and the six others, as EAIOo, OK Ki, &c. are the immediate results of the mechanical division.

The section of the crystal being still performed in, it is obvious that the terminal planes will present their figure and dimensions, while the height of the lateral ones will be continually diminishing, till the points a, k. of the pentagon okii, coinciding with the points i, k, and to of the other points finally situated, each lateral pentagon is reduced to a simple triangle, as in fig. 4. And when at length, by a continuation of the same mechanical division, these triangles have disappeared, all the original faces of the prism being completely obliterated, the primitive nucleus of the crystal will be obtained, in the form of an obtuse rhomboid, the large angles of which, EAI, or EOI, measure 101° 52' 13''.

If, for a second example, we take a crystal of dog-tooth calcareous spar (fig. 6.), it will be found that, by making one section through the edges E O, O I; a second through I J, G K; a third through G H, E H; a fourth through O I, I K; a fifth through G K, G H; and a sixth through E H, E O, the primitive rhomboid will be at once obtained; whence it follows, that the edges above-mentioned correspond with the lateral edges of the primitive nucleus, as is obvious, at first sight, from fig. 7, which represents this primitive figure, inscribed in a pyramidal dodecahedron, with five triangular faces.

Thus, in like manner, all the crystalline forms of calcareous spar, even those that differ from the primitive one, may be reduced by mechanical division in the directions of their lamina to the rhomboid.

It has already been mentioned, that the primitive form of each species is constant, not only in its figure, but also in the dimensions of its angles; but when we find that there are several rhomboids of calcareous spar, which differ very materially from each other in the measurements of their angles, it may be thought that this circumstance invalidates the above assertion. But this objection, though plausible, is by no means real; for none of these secondary rhomboids are divisible parallel to their sides, and, therefore, want the essential characteristic of a primitive crystal; further, they are all reducible to the primitive form by the successive removal of their external lamina, as we shall proceed to shew, in the instance of the secondary rhomboid, the plane angles of which, surrounding the summits, are 75° 31' 26", and which is represented by fig. 8, including its primitive nucleus. In order to effect the mechanical division of this crystal, sections must be made parallel to the fix terminal edges a A, b B, c C, d D, e E, f F, g G, etc., at one extremity, and a', b', c', d', e', f', g', h', i', j', k', l', m', n', o', p', q', r', s', t', u', v', w', x', y', z', at the other, so that every one of these secondary planes shall intercept equal and similar portions of the two adjacent faces of the rhomboid. These sections will produce the fix pentagons a', b', c', d', e', &c. (fig. 9.) and it is easy to perceive that, by successive sections parallel to these, the original faces of the rhomboid will be obliterated, and the primitive rhomboid A A (fig. 8.) will be produced. R I
to be remarked also, that the faces of this primitive rhomboid incline in the same degree towards the common axis, as the edges $1, 2, 3, 4, \&c.$ to which these faces are parallel. But the edges above mentioned form larger angles with the axis, than would be produced by the oblique diagonals $x, y, z,$ or, which is the same thing, by the faces $1, 2, 3, 4, \&c.$ whence it is obvious that, in the rhomboid extracted by mechanical division, the angles of the summit will be febably larger than the corresponding ones in the containing rhomboid.

If, instead of calcareous spar, a crystal belonging to another species is divided in a direction parallel to its lamina, a different shaped nucleus will be eliminated. For example, a cube of floor spar will afford a regular octahedron, by dividing it parallel to its eight fold axes; these will each be replaced by an equal number of equilateral triangles, and, at length, when the faces of the cube have entirely disappeared, the crystal will be converted into the regular octahedron. Thus also the primitive form of a hexagonal spar will be found to be a hexagonal prism with rhomboidal bases; that of apatite, a regular hexagonal prism; that of galena, a cube, &c. It is not always neccessary to diffeft a cryftal, in order to reduce it to its primitive form; for we find natural rhomboids of calcareous spar, octahedrons of floor spar, &c. which, in every respect, exactly correspond with the primitive nuclei extracted mechanically from other varieties of the above species.

The natural primitive forms, however, are, upon the whole, of less frequent occurrence than the secondary, or derivative forms.

The number of primitive forms, as yet ascertained, is only six; namely, the parallelepiped (including the cube and rhomboid); the octahedron; the tetrahedron; the regular hexahedral prism; the dodecahedron, with rhombic planes, all equal and similar; and the dodecahedron, with triangular planes composed of two straight pyramids, united by a common base.

The nucleus, or primitive form of a crystal, is, however, by no means the ultimate result of its mechanical division; for every primitive form admits of successive feotions parallel to its faces, till it becomes no longer visible to the naked eye; and certain nuclei are also susceptible of transfer or diagonal sections, the result of which is a figure different from that of the primitive cryftal. The form produced by the ultimate division of a cryftal, may be considered as the representative of its integral particles, and this is the last term to which mechanical division is capable of being carried; the elementary, or chemical component particles, not being susceptible of separation from each other by any other means than chemical attraction, which is wholly different from mechanical force.

If the primitive form of a cryftal is a parallelepiped, and can be subdivided only by sections, parallel to its faces, it is evident that the figure of the integral particles is the same as that of the primitive nucleus. Thus, the primitive form of calcareous spar is a rhomboid; and because this rhomboid is divisible only by sections, parallel to its faces, it necessarily follows, that the form of its integral particles is also a rhomboid. But it is possible that the primitive parallelepiped may be divided also by planes not parallel to the external faces. For example; let $A B C D$ (fig. 10.) be a rhomboid, divisible at the same time parallel to the fix rhomboids by which it is bounded, and in the direction of the short diagonals of the faces. These latter sections will divide the rhomboid into fix tetrahedrons, which, in fig. 10, are represented as surrounding the nucleus, which may thus be considered as made up of tetrahedral integral particles. This peculiarity of structure is found in the tourmaline.

An example of the integral particles, differing in figure from the primitive nucleus, although this latter is divisible only parallel to its external faces, is afforded by the apatite. The primitive form of this mineral is a regular hexahedral prism, which may be subdivided only by sections parallel to its basal and sides; but from this division will result an assemblage of triangular prisms, as is plain from the mere inspection of fig. 40, in which one of the bases of the prism is represented as divided into equilateral triangles, each of which is the base of a small triangular prism, representing an integral particle.

It is worthy of remark, that the forms of the integral particles of all crystals may be reduced to one or other of the three above-mentioned, namely, the tetrahedron, the most simple of all the pyramids; the triangular prism, the most simple of all the prisms; and the parallelepiped, the most simple of all those solids, the faces of which are parallel to each other by pairs. And since every plane solid must be bounded by at least four surfaces, it is evident that the three forms above-mentioned, in which the number of faces is successively four, five, and six, are possessed of the greatest simplicity possible.

This general simplicity is, however, by no means incompatible with almost infinite variety in the dimensions of the integral particles, and the measurements of their several angles. Thus, the parallelepiped may be rectangular, forming a cube or square prism; or may be oblique-angular, forming an infinite variety of rhomboids. The triangular prism, also, may be equilateral or isosceles; and the pyramidal tetrahedron may exhibit analogous diversities.

There are, however, certain forms of integral particles, as well as of primitive nuclei, which are common to two or more different substances. Iron pyrites and common salt, for example, have each of them a cube for their primitive nucleus: ruby and native bismuth present the regular octahedron. But it is remarkable, that all these forms which are common to several minerals, are characterized by the utmost possible simplicity and regularity, as the cube, the regular octahedron, the dodecahedron with rhombic planes.

It remains to give a brief account of the peculiar modes of arrangement followed by the integral particles, by which are produced those regular coverings of crystaline laminae which disguise, under such various forms, one and the same primitive nucleus.

Now, experiment and observation shew, that this covering matter is an assemblage of laminae, which, proceeding from the primitive nucleus as a centre, constantly decrease in extent, either all sides equally, or more on some than on others. This decrement is effected by regular subtractions of one or more rows of integral particles, either on the sides or fold angles of the primitive form, and on some of these angles.

A few simple instances will serve to give a clear idea of the laws to which these decrements are subject.

Let $1, 2, 3, 4, \&c.$ represent integral crystals, in form of a rhomboidal dodecahedron, with a cube for its primitive nucleus. In order to extract this nucleus, it is necessary to remove, successively, the fix fold angles, composed of four planes each, as $1, 2, 3, \&c.$ by sections passing through the short diagonals of the three rhombic faces, of which the fummits $O \&c.$ are composed; the planes of these sections will form as many squares, $A E O I, E O O' E', I O O' I,$ &c. fig. 12, which are the faces of the cube.

Now, suppose that each of the faces of the cube supports a series of decreasing laminae, composed of cubical particles, every one of which exceeds that immediately above it, by one row of particles on each of its four sides; the necessary result, therefore, will be the formation of fix quadrangular pyramids, refilling flights of steps, resting on the
the six faces of the primitive cube. Three of these pyramids are represented in fig. 13, having their summits at A, B, C. These six quadrangular pyramids are composed of twenty-four triangles, as O T, O P, &c.; but because the decrement is uniform, from 2 to 6, and so of the rest, the opposite triangles of two adjacent pyramids are on the same level and form a rhomb, as A O T 1. The surface of this secondary fold will, therefore, be bounded by twelve equal and similar rhombs, or, in other words, the rhombohedral dodecahedron (fig. 11) will be recomposed.

This dodecahedron is represented in fig. 13, in such a manner, that the progressive decrement of the superposed lamina is visible, to the naked eye. The cubic nucleus, it is to be observed, has each of its faces composed of 17 rows of integral particles, which will give 269 for the area of each surface, and 4913 for the solid contents of the cube. This primitive form is covered by eight superposed laminae; (the upper confiding of a single particle) the length of the sides of which are equal, respectively, to 15, 13, 11, 9, 7, 5, 3, 1 particles, forming a series, the common difference of which is 2, there being one row subtracted from each end.

If, to the above representation of integral particles, which, however coarse, has yet the advantage of being obvious to the eye, we add, in imagination, the almost infinitely delicate structure of real crystals, we must conceive the primitive nucleus as composed of a vast multitude of cubes, each of which singly is imperceptible; in which case, the number of superposed laminae will also be far greater than in the preceding hypothesis. Hence it will follow, that the faces, formed upon the faces of the dodecahedron, by the alternate latent and reentering angles of the superposed laminae, though they really exist, will yet, from their minuteness, be invisible to the naked eye.

In the example just given, the ratio of the decrement is equal to two rows of integral particles subtracted from the breadth of the superposed lamina; therefore, the height of the pyramid thus produced is equal to half the length of one of the sides of its base; but the ratio may be equal to one, three, four, five, or six rows, in which case the height will be to the breadth of the pyramid, as 1 : 1, 1 : 2, 1 : 3, &c. But the decrements of the superposed or secondary laminae may be considered as taking place, not merely in breadth, but in height; and the ratio or common difference of these latter may also vary from one to six rows of integral particles, in which case the height will be to the breadth of the pyramid, as 1 : 1, 1 : 2, 1 : 3, &c. It not unfrequently happens, that these two kinds of decrement are united in the same crystal; and to this circumstance it is that the great variety of crystalline forms, under which the same substance appears, is chiefly to be attributed.

The dodecahedral iron pyrites, with pentagonal faces, is an example of the combination of the two modes of decrement. The primitive nucleus of this substance is a cube, the position of which, with regard to the circumscribing dodecahedron, is evident from the mere inspection of fig. 15. In this the superposed laminae, instead of forming pyramids, as in the foregoing example, compose very obtuse, wedge-shaped solids, bounded by two trapeziums, as O P 1 q, A E 1 q, and two isosceles triangles E p o, A q I.

Now suppose a decrement to take place by two rows in breadth between the sides O I and A E, I 1 and O O', E O and E' O, and in like manner upon the opposite faces, and that decrement, by two rows in height, takes place at the same time between the sides E O and A I, O I and O' I, O' O and E E'; it is then obvious that the two kinds of decrement are carried upon upon each other, at right angles in three directions. And the decrement, by two rows in breadth, tending to produce a more inclined face than the decrement by two rows in height, each pile of superposed laminae will terminate not in a point, but will produce a wedge-shaped solid, fig. 10, that is to say, it will be terminated by the edge p q or r s; and if the directions of these two edges are compared with that of the edge r s, (figs. 14 and 15) which terminates the pile raised on the face E O O' E' of the nucleus, it will be plain that these three edges are perpendicular to each other.

Further, each trapezium, as O P p q (figs. 15 and 16) being on the same plane as the triangle O I 1, which belongs to the adjacent pile, will be confounded with it, and the result of this union will be the triangle O I q, whence it follows that the whole solid will be bounded by twelve equal and similar pentagonal faces, on account of the regular form of the nucleus and the symmetry of its decrements.

Both the kinds of decrement which we have here described, commence from the sides or edges of the primitive nucleus; but these are not sufficient to explain all the varieties of form presented by secondary crystals. Both observation and calculation demonstrate that there are also decrements commencing from the angles, and proceeding in a direction parallel to the diagonals of the faces. This is proved from the circumstance, that the same substances which, having a cube for their primitive nucleus, appear under the forms of the pentagonal and rhombohedral dodecahedrons, are also found under that of the regular octahedron. It seems, indeed, at first sight, very possible to deduce this octahedron from a decrement on the edges of the cubic nucleus, for if the secondary laminae are considered as superposed only on two opposite faces of the cube, as for example on A E O I, and A E O' E' (fig. 20) there will be formed on these bases two pyramids, and if the faces of each pyramid are supposed to be prolonged till they meet, which will be effected merely by a continuation of the same law of decrement by which the pyramids themselves are formed, there will be produced an octahedron, the angles of which will vary as the decrement has been made by the subtraction of one or more rows. But it may be demonstrated by calculation, that no law of decrement, however complex, will produce an octahedron, the faces of which are equilateral triangles, if this decrement takes place from the edges of a cubic nucleus.

On the other hand, if we actually derive a regular octahedron, moulded on a cube, we shall perceive that this primitive nucleus is so situated with regard to the octahedron, that each of the eight fold angles of the former correspond with the centres of the triangular faces of the latter; a fact wholly inconceivable with the hypothesis of a decrement on the edges. Fig. 20, represents this arrangement, and it is obvious that in order to disembogue the nucleus, it is necessary to destroy the six fold angles of the octahedron by sections perpendicular to the axes passing through these face angles, and therefore of course parallel to the faces of the cube.

In order to explain the law of decrement on the angles which takes place in the preceding example, let O I 1 O' (fig. 21) be one of the faces of the cubic nucleus, subdivided into a multitude of lesser figures, which are the bases of an equal number of integral particles. These rows of particles may be considered in two different directions, namely, as parallel to the sides, as the row a, m, q, r, s, t, or as parallel to the diagonal of the face, as the rows a, b, c, d, &c.; m, n, s, h, m, &c., q, y, z, &c.

The
The particles of the rows parallel to the sides, touch each other by one of their faces, and are in a state of simple juxtaposition. But the particles of the rows parallel to the diagonals, touch each other only by one of their edges, and each row, as it were, locked into that adjacent to it on each side. Now it appears that the lamina superposed on the face of any cubic nucleus, or of any other, must infrequently decrease by the subtraction of diagonal rows of particles. In this case the secondary faces thus produced, are not frustated, (as they are where the decrement takes place parallel to the edges,) but set, all over, with points, which being all on the same level, and of extreme minuteness, appear to the eye like a plane surface. It now we suppose all the lamina superposed on a cubical nucleus, to decrease by one row on all the angles of the nucleus, this decrement will produce the regular octahedron, the mechanical division of which has been already described.

In order to explain the operation of this law of decrement, let A E O I, (fig. 23. A,) be the upper surface of a cubical nucleus composed of eighty-one smaller squares representing an equal number of integral particles. The face of the superposed lamina will be of the form representing the faces of the higher cubes, (fig. 22,) and will be placed on the face of the nucleus, that the points $e'$, $a'$, $i'$, of the latter, correspond with the points $e$, $a$, $i$, of the former. According to this disposition the figures E A, A O, O I, I, (fig. A,) remain uncovered, which is the first effect produced by the particular decrement just mentioned. It is further to be observed, that the sides Q V, P N, L C, F G, (fig. B,) exceed by one row the corresponding sides A E, E O, O I, I A, (fig. A,) this being necessary in order that the nucleus should be covered on the above sides, and that the solid should increase in the usual manner in those parts to which this particular law of decrement does not extend.

The upper surface of the second lamina will be to B K H D, (fig. 23. C,) and it is to be placed on the preceding, so that the points $e'$, $a'$, $i'$, of may coincide with the points $e$, $a$, $i$ of the former. In consequence of which the figures which have their external angles situated at Q, S, R, V, P, T, M, G &c. will be left uncovered by the subtraction of one row of particles. It is to be observed, also, that the solid continues to increase on the sides analogous to E A, E O, A I, O I, (fig. A,) but as the effect of the decrement is continually contracting the surface of the lamina, in the direction of the diagonals. there is only a single cube added on the sides B, K, H, D, (fig. C,) not subjected to the decrement, instead of the five cubes by which the preceding lamina is terminated on the sides Q V, P N, L C, F G, (fig. B.)

The surfaces of the superposed lamina, which hitherto have been octagonal, as fig. 23, B, having by the progressive effect of the decrement become square, as fig. 23, C, will now decrease on all their sides at the same time, so that the next lamina will have for its surface the figure B R, I H, D $'$, (fig. D,) left by one row of particles on each side of the preceding figures (fig. C,) to be placed upon that the points $e$, $i$, $a$, of the correspond with the points $e'$, $i'$, $a'$, of the.

The figures, E, F, G, H, I, represent the five succeeding laminae necessary to complete the pyramid, the latter of which, forming the summit of the pyramid, is only a single cube.

From the above description it will appear that the lamina superposed on the base E A, I O, (fig. A,) produce by the subtraction of their decreasing edges, five faces, which produce from the points E, A, I, O, I, incline towards each other, forming a pyramidal lamina.

It is to be remarked, also, that the superposed laminae begin by increasing in length, as is obvious from figs. 23, B, and C, and then gradually diminish, as is represented in the succeeding figures. Hence it follows that the secondary faces themselves first enlarge to a certain point, and then diminish, so that the form, as it were, two triangles, joined at their bases, or in other words, a figure, as in fig. 24, in which the inferior angle $a$ coincides with the angle O of the primitive nucleus (fig. 20.) and the diagonal $i x$, represents the side H K of the lamina B K H D (fig. 23. C,) and because the superposed laminae that produce the triangle $t o x$ are left in number than those of which the triangle $t o x$ is composed, the latter triangle will be much higher than the former.

The surface of the secondary crystal will therefore be made up of 24 quadrilateral planes, disposed in threes round each fold angle of the nucleus; but, as in decrements that take place by one row on every edge, the opposite faces on each edge are in the same plane, so in decrements by one row on the angles, the three secondary faces that are produced round each fold angle, as O (fig. 20.) are also on a level, and may therefore be considered as forming only a single one; and since a cube has eight fold angles, each composed of three plane ones, the secondary crystal will have eight faces, which, on account of the regularity of the nucleus, will be equalateral triangles; so that the whole crystal will be a regular octahedron.

One of these trinangles is represented, fig. 25, so as to show the arrangement of the small cubical particles by which it is produced.

The above may serve to give a general idea of M. Hauy's Theory of Crystallography, for a more full account of which we refer the curious reader to the first vol. of this author's " Traité de Mineralogie."

CRYSTALS, in the Aris. When any piece of workmanship in crystal is become foul and dark, the method of recovering its lustre without hurting its polish, is this: mix together six parts common water, and one part brandy; boil the above a brisk fire, and let the crystal be kept in it, in a boiling plate, a quarter of an hour; then take it out, and rub it carefully over with a brush dipped in the same liquor; after this, it is not to be left to dry of itself; but to be wiped with a clean napkin, and its surface will by this means be perfectly cleaned, and rendered as bright as at first, without that injury to the points of the cutting, or to the surfaces of the planes or facets, which would naturally have been the consequence of doing it by mere rubbing or wiping.

Natural crystal may be reduced, by calculation, into the state of the bodies proper for making glases with alkaline salts, and makes a molt fine and valuable fritt. The method of doing it is this: calcine natural crystal in a crucible; when red hot, throw it into cold water to quench it; repeat this eight times, covering the crucible, that so dust or ashes may get in and mix with the crystal; dry this calcined mass, and reduce it to an insusceptible powder; mix three pounds of this powder with two pounds of pure salts of poyvere, or with a quarter of a pound of red lead, and with these make fritt, and with the proper quantity of manganese, or other tingnet substances; smelt this often in cold water, and after a proper time, work it; it will yield a molt beautiful glase. Some have pretended to colour crystals by thus fusing them, and imparting the various tinges to them while in a molten flate. But as they cannot be luted by the heat of furnaces, without the medium of some fluxing body added to them, their texture and propreties
properies are so changed, or rather the glass produced by the composition is so different from the crystal itself, that there does not appear to be any advantage in employing rock crystal in such a composition preferable to flints. Hand. Arts., vol. ii. p. 327.

Natural crystal may be coloured of several colours, without melting or running it into glasses, in the following manner. Take a number of pieces of fine, clear, and pure crystal, of various sizes, of white arsenic, and yellow orpiment in powder, of each two ounces; add ammonia, one ounce; powder this also, and mix them well together; put this powder into a strong crucible; and lay upon it the pieces of crystal in their natural state, then cover this crucible with another, mouth to mouth; let them well, and when the lute is dry, let them in coals, which kindle by little and little; and when they begin to fire, let them kindle of themselves, and they will then foam very much. Let this be done in a large chimney, taking care to avoid the fumes. When it fumes no more, let the fire go out of itself, and let all flue till cool; then unhale the crucibles, and take out the crystals; those at top will be coloured to a fine yellow, with a deep and pale red, the colours of the common fine and balas ruby, with beautiful spots; and those which are at the bottom upon the powder, will be of a watery colour, mottled like that of the viper. This crystal comes out so fair from this process, that it may be cut as a gem; and though many are floatet, yet, in making a large quantity, there are always some fair and perfect. Nerl's Art of Glafs. p. 177. See Doublotts, and Opal.

Boetilla Porta directs to colour crystals by keeping them immersed for four or five hours in a melted mixture of sulphur, crude antimony, orpiment, arsenic, and turpentine. These operations, the crystals seem to imbibe some of the vapoours of the metallic substances; though the method of giving colours to crystals by cementation seldom or ever fairly succeeds.

Crystall. Rock, in Mineralogy and Natural History.

See Quartz.

Crystall-glass, the purest sort of glass, forming the basis of the fictitious gems. For a particular description of which, see Glass, the manufacture of.

Crystal, or Cream of Tartar, is tartar purified and disdolved, and again crystallized. For an account of its properties, and the method of preparing it, see Tartarite of potasyl, (acidulous).

Crystal of Tartar sublimed, or Ferrum Tartaricum; see Iron, Tartarite of.

Crystal mineral, called also mineral azurdyne, and sal prunella, is nitre detonated with sulphur, thus; put a pound of nitre in a crucible, and set that in a furnace, and when the nitre is in fusion, let it be detonated with a drum of sulphur; after the detonation is over, pour the fluid into moulds, where it soon hardens into a white crystalline mass.

Crystals of Silver, or Luna. See Silver, nitrat of.

Crystals of Mars, called also salt, or vurid of Mars; see Iron, sulphat of.

Crystals of Venus, or of Copper, is nitrat of Copper; which see. Acetate of copper, or crystallized verdigris, is also sometimes called by this name.

Crystal of Iceland, or Island, is very pure calcareous spar, in oblique rhomboidal prisms; for a particular description of which, see Limestone, foliated.

The Iceland crystal is electrical, and when rubbed will draw up hairs, feathers, and other light substances, in the same manner that amber does.

The vast masses of white spar which are found in the lead mines of Derbyshire, though they are not externally of the parallelepipied figure of the Iceland crystal, nor have any thing of its brightness or transparency in the general lump; yet when they are broken, they separate into rhomboidal fragments, and some of these are found to be tolerably lucid: all those which are so, have the property of the Iceland crystal; and being laid upon paper, where a black line is drawn, they all draw that line double in the same manner as the real Iceland crystal does.

Iceland crystal bears a red heat without loosing its transparency; and, in a very intense heat, calcines without fusion; keeps a day or two in water, it loses its natural polish.

It is very soft, and easily scratched with the point of a pin: it will not give fire on being struck against steel; and ferments, and is perfectly dissolved in aqua fortis. It is found in Iceland, from whence it has its name; and in France, Germany, and in many other places. In England, fragments of other fpa are very often mistaken for it, many of them having, in some degree, the same property.

Bartholin, Huygens, and Sir Isaac Newton, have described the body at large, but have accounted it either a crystal or a tale, errors which could not have happened, had the criterions of fossils been at that time fixted; since Sir Isaac Newton has recorded its property of making an emission with aqua fortis, which alone must prove that it is neither tale nor crystal, both these bodies being wholly unaffected by that meatusum.

The phenomena of this stone are very remarkable, were first suggested by Bartholin, and have been examined with great accuracy by M. Huygens, and Sir Isaac Newton.

1. Whereas in other pellicid bodies there is only one refraction, in this there are two; so that objects viewed through it appear double.

2. Whereas in other transparent bodies, a ray falling perpendicularly on the surface, passes straight through, without suffering any refraction; and an oblique ray is always divided; in Iceland crystal, every ray, whether perpendicular or oblique, becomes divided into two, by means of the double refraction. One of these refractions is, according to the ordinary rule, the line of incidence out of air into crystal, being to the line of refraction as five to three; but the other is perfectly new. The like double refraction is also observed in crystal of the rock, though much less sensibly.

When an incident ray is thus divided, and each moiety arrives at the farther surface, that refracted in the first surface after the usual manner, is refracted entirely after the usual manner at the second; and the other, which is refracted in the unusual manner in the frst, is entirely refracted after the like manner in the second; so that each emerges out of the second surface, parallel to the first incident ray. Again, if two pieces of this crystal be placed over each other, so that the surfaces of the one be parallel to the corresponding ones of the other; the rays refracted in the usual manner in the first surface of the first, are refracted after the usual manner in all the other surfaces; and the same uniformity appears in the rays refracted after the unusual manner; and this in any inclination of the surfaces, provided their planes of perpendicular refraction be parallel.

From these phenomena Sir Isaac Newton infers, that there is an original difference in the rays of light; by means whereof some are, here, constantly refracted after the usual manner; and others in the unusual manner. Were not the difference of original, and did it arise from any new modifications impressed on the rays at their first refraction, it would be altered by new modifications in the three following cases, whereas, in fact, it suffers no alteration at all.

Again,
Again, he hence takes occasion to suspect, that the rays of light have several sides, endowed with several original properties; for it appears from the circumstances, that these are not two forts of rays differing in their nature from each other, one confusedly, and in all positions, refracted in the usual, and the other in the unusual manner; the difference is the experiment mentioned, being only in the position of the sides of the rays, to the plane of perpendicular refraction. For one and the same ray is refracted sometimes after the usual, and sometimes after the unusual manner, according to the position of its sides to the crystal; the refraction being alike in both, when the sides of the rays are placed the same way to both, but different, when different.

Every ray, therefore, may be considered as having four sides, or quarters; two of which, opposite to each other, dispose the ray to be refracted after the unusual manner; and the other two in the usual. These dispositions, being in the rays before their incidence on the second, third, and fourth surfaces; and suffering no alterations, for what appears in their passage through them, must be original and connate.

Father Beccaria corrects the observations of Huygens and Newton concerning the refraction of rock or mountain crystal. The double refraction of the latter happens, when a ray paffes through two sides that are inclined to each other, and consequently issues coloured; whereas that of the Iceland crystal is made by the passage of a ray through two parallel sides, and therefore it issues colourless. He figures, that there may be other refiances, in which there is a manifold refraction. Gravesside had a prism of Brafl pebbly, which had a double refraction at each angle, but of a different kind from one another. Phil. Trans. vol. lii. part ii. p. 437, &c. Mr. B. Martius prepared several prisms of Iceland crystal, which exhibited not only a double but a multiple refraction. A single prism produced a fix-fold refraction; and by combining several prisms, a number of refractions was obtained equal to the product of those of the single prisms; i.e. a prism which afforded two images applied to one of six, produced a prism of twelve images, &c. He further observes, with respect to Iceland crystal, that though the sides of its plane of perpendicular refraction be parallel to one another, a beam of light transmitted through them will not be colourless; in which property it differs from all other known refiances. See Martin’s Essay on Iceland Crystal, or Fréchette’s Hist. of Vision, period vii. § 8. p. 543, &c. See Refraction.

CRYSTALLINE LENS, or Crystalline Humour, in Anatomy, a transparent body, nearly spherical in form; imbedded in the anterior part of the vitreous humour, where it is enclosed by the membranes hyaloidea passing before and behind it; which portions of membrane form its capsule. See Eye.

The crystalline is set in the anterior part of the vitreous humour, like a diamond in its collet; and is retained there by a membrane which surrounds it; and which, for that reason, is called the capsule of the crystalline. This membrane is sometimes also called crysalliodes; and by others, on account of its fineness, which resembles that of a spider’s web, arachnides.

It is the configuration of the crystalline that occasions perfun to be either myopic, or presbyopic, i.e. to be either long, or short-sighted; a discovery first foggedled, and proved by Maurolycus of Melfa, in a treatise, De Lumine & Umbra, published in 1575. Bapt. Porta thought that this humour was the principal seat of vision.

The crystalline being of two confinences, outwardly like a jelly, but toward the centre as hard as salt; hence some authors think, that its figure may be varied; which variation they suppose to be effected by the ligamentum ciliaris. Hence, Dr. Crew, and others, ascribe to the ciliary ligament a power of making the crystalline more convex, as well as of moving it to or from the retina: accordingly, by the laws of optics, something of this kind is absolutely necessary to direct vision: for, as the rays from distant objects diverge less than those from near ones; either the crystalline humour must be capable of being made more convex, or more flat; or else there must be an elongation of the eye, or of the distance between that and the retina.

The crystalline humour, when dried, appears to consist of a vast number of thin, spherical laminae, or scales, lying over one another. Leewenhoek reckons there may be two thousand of them in one crystalline; each of these, he says, he has discovered to consist of a single fibre, or fine thread, wound up in a turpoid manner, this way and that, so as to run several courses, and meet in as many centres; and yet not interfere nor cross in any place. Phil. Trans. N° 165, and 203.

The vessels of the crystalline humour of the eye are all the branches of an artery, which being sent off from the artery which enters at the central part of the retina, paffes through the vitreous humour, and when it reaches the crystalline, diverfes its branches along the surface of the lens like radii, till they are exceeding minute, when they pierce into its substance. Med. Eff. Edinb. vol. i. p. 337.

M. Petit, the physician, has many minute observations and experiments on the colour, confidenee, meafure, weight, &c. of the crystalline humour of the eye, and its capsule in different animals; but his observations are fo numerous, that we can only take notice of fome of them. He obferved, that in ferpefts and fishes the crystalline is nearly spherical; whereas in all other animals which he examined it was lenticular, the anterior surface being fels convex than the posterior.

This humour hardens with age, and is not fo hard in men as in birds, quadrupeds, and fihes; its hardnefs increasing in the order here eXpressed.

He also observes, that the crystalline changes colour with age, becoming gradually more and more tinged with yellow, after the age of twenty-five years, in proportion to its hardnefs.

He fays, in confirmation of Leewenhoek’s discovery, that the crystalline confi& the crystalline consists of concentrical laminae: he always found the capsule transparent, and denies any connection between this membrane and the crystalline, or that there are any vessels going from the one to the other; but affirms that the crystalline is nourished by abfoiling the lymph lodged between it and its capsule.

But Albinus discovered this to be a mistake; and that, on the contrary, it is connected with the capsule by means of several vessels, which, paffing through small perforations in the capsule, are inferted at the extremities of it, and spread along the back part of it; and that it receives its nourishment by veflels, which are the branches of the central artery paffing through the vitreous humour, and divided into several branches in the back part of the capsule, and transmitted to the interior parts of the crystalline, by which it is also fulfilled.

Dr. Porterfield has accounted for the greater central hardnefs of the crystalline; as the rays of light, which fall near its axis, and would conSequently be lefs refracted than those that fall more obliquely nearer the extremities, have hereby their refraction increاد, and are made to converge and meet with those at the fame point, with those that pass through it nearer its edge.
When the crystalline or vitreous humours are fallen out of the eye, it is easy to conceive, that not only the fight, but the figure of the eye, must be entirely destroyed; therefore, in an accident of this kind, the eye must at first be dressed with compresses dipped in warm wine, or spirit of wine, and afterwards with some vulnerary balsam. But it sometimes happens, when only the tunica albuginea, and sclerotics, are slightly wounded, the cornea and uvea remaining unhurt, that the eye recovers itself: and though both the vitreous and crystalline humours fall out by the wound, yet they are renewed again by the efficacy of nature, and the office of light performed as well as before the injury happened.

The crystalline is the subject of the disease called a cata-

racy, and the operation of couching. See Eye.

Crystalline Heaven, in the Old Astronomy, two orbs maguated between the primum mobile and the firmament, in the Ptolemaic system, in which the heavens were supposed solid, and only susceptible of a single motion.

King Alphonse of Aragon is said to have introduced the crystallines, to explain what they called the motion of trepidation, or titubation.

The first crystalline, according to Regiomontanus, &c., serves to account for the slow motion of the fixed stars; which makes them advance a degree in seventy years, according to the order of the signs, viz. from well to east; which occasions the precaution of the equinoxes.

The second serves to account for the motion of libration, or trepidation; whereby the celestial sphere librates from one pole towards another, occasioning a difference in the sun's greatest declination.

But the moderns account for these motions in a much more natural and easy manner.

CRYSTALLIZATION, in Chemistry. See Crystal.

CRYSTALLOGRAPHY. See Crystal.

CRYSTALLOMANCY, the art of divining, or foretelling, future events, by means of a mirror; wherein the things required are represented.

It is also called catoptromancy. The first from κρυσταλλος, enameled water, or crystal; and the second from χαλκος, copper, and μαντις, divination.

CRYSTINE, in Commerce, a silver coin in Sweden, equal to fourteen sous and eleven deniers French. They have also demi-crystines.

CSAKATHURN, in Geography, a town of Hungary, situated on a small river between the Mur and the Drave; celebrated for its wine; 20 miles W. of Cumfica, and 95 S. of Vienna.

CSABA, a small town of Hungary, in the county of Békes, on the river Theis, inhabited by a colony of Bohemians.

CSABRAG, a small town of Hungary, with an ancient castle. There are some mines in its neighbourhood. It is situated in the province of Nagi Hont, and in the district of Bozok.

CSAKA TORNYA, or CSARKURN, a small town of Hungary, in the county of Szala, belonging to the counts of Altheim, with a magnificent castle, the fortifications of which are fall decaying. In one of the walls of the castle are the ruins of a monument, erected to a Roman tribune by his wife, under the reign of Antoninus Pius. G. A. H. Gubart. Journal d'un Voyage en Allemagne, Paris, 1823.

CSAKOVAR, a small town of Hungary, in the banat of Temesvar, on the river Temes.

CSARKVAR, a small town of Hungary, in the county of Szabolcs, with an old ruined castle, belonging to the family of the Csaki, who descend from the count Szabolcs, one of the seven Hungarian leaders that invaded Hungary in the ninth century.

CSANAD, a small town of Hungary, in the county of the same name, on the river Maros. It is the seat of a bishop, and famous for a flourishing trade; 64 miles N. of Belgrade, and 200 S.E. of Vienna.

CSEIKO, a small town of Hungary, in the county of Bar, district of Leva; famous for its good wine.

CSEKLES, a small town of Hungary, in the county and district of Preßburg, with a handsome palace belonging to Prince Escherizzi. It is situated on an eminence.

CSENGER, a small town of Hungary, in the county of Szatmar, with an old castle.

CSEPREG, a small town of Hungary, in the county of Hungary, in the province of Oedenburg or Sopron.

Cserapuxa, a town and castle of Hungary; 8 miles N.E. of Eger.

Cesenya, a river of Hungary, which runs into the Danube, near Orfova.—Also, a town of Sclavonia; 20 miles S. of Eszék.

Csernech, or Csevezek, a small town of Sclavonia, that part which is called the banast of Sclavonia, and in the county of Poffe.

Csernigrad, or Tarkavara, a small town of Sclavonia, that part which is called the banast of Sclavonia, and in the county of Sirm, on the river Drave. It was anciently fortified, and still retains some traces of a fortres.

Cseszte, a small town of Hungary, in the county and district of Preßburg, on a pleasant eminence near Biberburg castle.

Cskivar, a small town of Hungary, in the county of Stuhl Weissenburg, with an old castle on the river Carvitz.

Csogod, a town of Transilvania; 16 miles E. of Udvardy.

Csokaku, a town of Hungary, at the confluence of the rivers Keres and Theis; 22 miles N. of Zegedin.

Csongrad, Czongrad, or Csongorod, a considerable town of Hungary, in the county of the same name, with an ancient castle, situated at the confluence of the rivers Keres and Theis.

Csotortok, a small town of Hungary, in the county and district of Preßburg, not far from the ancient castle of St. George, which is now a heap of ruins.

CTEMENAE, in Ancient Geography, a town of Greece, in the Peloponese of the Thessaly.

Ctenitas, or Ctenoidea, names sometimes given to those pectines which have one of their shells very convex. See Pecten.

CTESIBIUS, in Biography, a mathematician of Alexandria, who was contemporaries with Ptolemy king of Egypt, in the 165th Olympiad, about 120 years before Christ. His memory is particularly cherished as the inventor of the pump. The circumstance that led to the discovery was purely accidental. On lowering a mirror into his father's shop, he observed that the counterpoise, which was included in a cylinder, produced a sound, by driving the air before it; and upon examining the phenomenon more closely, he concluded that he might make an instrument, in which sounds should be produced by means of the action of water, driving the air before it. This invention was carried into effect by the emperor Nero. Ctesibius was the inventor, likewise, of a clepsydra, or water-clock. Water was made to fall upon a wheel, or a train of wheels, which were turned by it. The

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\text{U} \quad \text{wheel}
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wheels communicated their motion to a small wooden image, which, by being gradually raised, pointed with an index to the proper hours, that were engraved on a column near the machine. The invention was probably the means of the more modern construction of the sand-glyphs for measuring time, which form an imitation of the Cephisus. Ctesibius was author of a treatise, "Goddes, or the Art of dividing and measuring Bodies," which is said to exist in the library of the Vatican. Moretou.

CTESIDEMUS, an eminent painter, who is celebrated for his picture representing Hercules taking of Oechalia, a city of Boeotia; and for another of Laodamia ascending the funeral pile. Della Valva.

CETIFONTE, CHERIFONTE, or CETIFON, the architect who designed the famous temple of Diana at Ephesus, about 550 years before the Christian era. This edifice, which was 200 years in building, was commenced under his direction, and continued under that of Metagenes his son; and is the same which was afterwards fired by Erostratus, restored, as it is said, in this barbarous enterprise, by no other motive than that of immortalizing his name. Milizia Mem. degli Architetti.

He invented a machine that was used to transport the columns of the temple, from the quarries from which they were hewn, to the building of which they were to be made a part. This machine consisted of a square frame of wood, of sufficient dimensions to enclose a whole column, with a socket at each end, into which certain strong iron pivots, proceeding from the column itself, were received. By this contrivance, the column became a kind of rolling stone.

CETISLOCO, the scholar of Apelles, was known by his picture representing the birth of the Egyptian Bacchus, which Jupiter seemed to manoeuvre infamously in the midst of the goddes, afflicting at the labour. Phiny depreciates this painting as highly indecent. It is conjectured by Della Valva, that this artist may have been the same with Ctesibius, who is said to have been the disciple and brother of Apelles. Della Valva.

CETIFON. See CETIFONTE.

CETIFON, in Ancient Geography, a city of Asia, in Parthia, situated on the eastern bank of the Tigris, opposite to Babylon, and at the distance of only three miles from Seleucia. This city was founded, according to Ammianus Marcellinus (I. xxiii. c. 20.), by Vardanes, and named and fortified by Pausus, supposed by Valerius to have been the Lawdes, whom Ventidius defeated. Polybius (I. v. c. 45.), Tacitus, Herodian (I. iii. c. 9.), and Strabo (I. xvi.), speak of Cetifon as the metropolis of the whole Parthian empire. It was at first an insignificant village; but as the Parthian monarchs frequently pitched the imperial camp on the plain in its vicinity, and the innumerable attendants on luxury and dissipation flocked to the court, it insensibly advanced to be a great city. Under the reign of Marcus, A.D. 165, the Roman generals penetrated as far as Cetifon and Seleucia; and both cities experienced the same affright and devastation. Although Seleucia sunk under the fatal blow, Cetifon, in about 33 years, had so far recovered its strength, that it was able to maintain an obdurate siege against the emperor Severus. The city was, however, taken by assault: the king, who defended it in person, escaped with precipitation; 100,000 captives, and a rich booty, rewarded the fatigues of the Roman soldiers. Notwithstanding these misfortunes, Cetifon received a new name, and became, as one of the great capitals of the East. In summer, the monarch of Persia resided at Estabana in the cool breezes of the mountains; but the midsummer climate engaged him to prefer Cetifon for his winter-residence. In the time of Julian, Cetifon was a great and populous city; and Coche, as the only remaining quarter of Seleucia was called, was merely its suburb, connected with it, as we may suppose, by a permanent bridge of boats. The united parts contributed to form the common epithet of Al Modain, "the cities," which the Orientals have bestowed on the winter-residence of the Sassanides; and the whole circumference of the Persian capital was strongly fortified by the waters of the river, by lofty walls, and by impassable moat. Julian having, after a severe contest, taken possession of Coche, pursued the Persians to the gates of Cetifon; and holding a council of war, he declined the siege of the city, as a fruitless and pernicious undertaking, though he was led by an army of 60,000 Romans, A.D. 363. In the year 637, the walls of Cetifon, which had refitted the battering-rams of the Romans, yielded to the darts of the Saracens. Said, the lieutenant of Omar, passed the Tigris without opposition; the capital was taken by assault; and the disorderlyrefinance of the people gave a keener edge to the falches of the Mothems, who rushed with religious transport, "this is the white palace of Chefores, this is the province of the apostle of God." The ipso fact, says Abulfeda, surpassed the estimate of fancy or numbers; and another hitherto (Elmacin) defines the untold and almost infinite mass by the fabulous computation of three thousands of thousands of thousands of pieces of gold. One of the apartments of the palace was decorated with a carpet of silk, 60 cubits in length, and as many in breadth; a paradise, or garden, was depicted on the ground: the flowers, fruits, and shrubs, were imitated by the figures of the gold embroidery, and the colours of the precious stones; and the ample square was encircled by a variegated and verdant border. The rigid Omar divided the prize among his brethren of Medina. The picture was destroyed; but such was the value of the materials, that the farm of Ali alone was sold for 50,000 drachmas. The fack of Cetifon was followed by its desertion and gradual decay. One of the most considerable ruins of Affyrria is the hall of Chfiores at Cetifon.

CTISIANA, a town of Africa, in Mauritania Tingitana, according to Ptolemy.

CTIPANSA, a town of the Pelopenaeus, in Triphyla, according to Strabo. It is called Tympana by Polybius, and Tympanaea by Ptolemy.

CUADAC, in Geography, a Fast-boat town of Asia, in Totzap, on a river of the same name.

CUAM, a river of Africa, at the mouth of which the city and fortresses of Sofia are situated, called by the Arabs and Negroes Zambere and Embandi. Its spring-head is not known; but it surges, in some measure, the kingdom of Monomatapa, dividing it on the west from that of Abuta, and on the north from Ciecova, Saombbe, and Marinka. It receives in its course, among other streams of lesser note, the Mangana, Mazano, and Suabo; and, dividing into two branches, discharges itself into the Indian sea, at four mouths, from north to south, distinguished by as many names; viz. Kilaun, Linda, Cuma, and Luvua; or, according to others, Penhame, Lunganao, Arryuga, Manjovo, Guadire, and Rucria.

CUANARAMA, a mountain of New Andalusia, in S. America, which rises 4,000 feet above the level of the sea.

CUANDU, in Zoology, Coendou of Buffon, Brasilian Porcupine of Pennant, and Hystrlicus pseudalis of Gmelin; which is.

CUARIUS, in Ancient Geography, a river of Greece, in Eucosia, according to Strabo.

CUATLACHTLI, or LUPUS INDICUS, in Zoology, a
CUB
cub, in Rural Economy, a name sometimes applied to a young fox, and also provincially to signify a cattle crib.

Cub, North, in Geography, a small island in James's bay, Hudson's bay. N. lat. 54° 25'. W. long. 82° 50'.

Cub, South, a small island in the same bay. N. lat. 52° 43'. W. long. 86° 35'.

CUBA, in Ancient Geography, a town of India, placed by Ptolemy on this side of the Ganges.

Cuba, in Geography, a name given by the natives of San Salvador to a very large island of the West Indies, one of the Great Antilles islands, when it was first discovered by Columbus in 1492; but he gave it the name of Jamaica, or, as some say, Ferdinand, in honour of king Ferdinand, his master. But it soon recovered its Indian name, which it has ever since retained. This celebrated navigator entered the mouth of a large river with his squadron; but as he approached the shore, all the inhabitants fled to the mountains; those who were deputed to examine the interior parts of the country, whilst he was courting his ships, found that about 60 miles from the shore, the soil was richer and more cultivated than any they had hitherto discovered; and, besides many scattered cottages, they saw one village which contained above 1000 inhabitants. The people, though naked, seemed to be more intelligent than those of San Salvador, and treated them as they had been treated by the Spaniards. They provided rice for the Indians, and sent them to the coast, where it was bartered for gold, which, as the natives reported, was found in "Cubanianac," by which they meant the middle or inland part of Cuba. Columbus visited almost every harbour, from Porto del Principe, on the north coast of Cuba, to the eastern extremity of the island; but, whilst he admired the beauty of the scene, and the fertility of the soil, he was disappointed by not discovering any quantity of gold. Cuba was not aribated to be an island till the year 1508, when a captain, named Sebaldin, failed round it by order of Obadana, the governor of Hispaniola, for Columbus supposed it to be a part of the continent; nor was it completely conquered by the Spaniards, who sacrificed an incredible number of the inhabitants, till the year 1511. In this year the admiral Jago, or Don Diego, Columbus sent Jago Velazquez with about 300 men, from Hispaniola, in order to take possession of the island, and to plant there; and he settled on the fourth coast, near a port which he called by his own name, and which for extent and security may be reckoned one of the finest in the world. While Velazquez was governor of Cuba, he built the city, and port of the Havana; the hovels of which at first were built of wood; afterwards they were constructed of stone, and a fort was erected at the mouth of the harbour. But this port has been often pillaged both by French and English pirates. (See Havana.) The other principal towns are Santa Cruz, about 63 miles E. of Havana, Porto del Principe, on the same coast, about 300 miles S.E. of Havana, Baracoa, on the N.E. part of the island, with a convenient harbour, for small vessels, and St. Jago, formerly the capital and the residence of its government.

This island commences on the east side at N. lat. 20° 20', approaches on the north the tropic of Cancer, and extends from W. long. 73° 50', to 83° 30', about 11° 45', from east to west, or 990 geographical miles from Cape Antonio on the west, to Cape Mayon on the east; but it is narrow, in proportion to its length, being in some parts not above 12 or 14 leagues, and at most but 200 miles in breadth. It contains about 88,400 square miles. It lies W. of Hispanola, N. of Jamaica, and the bay of Honduras, E. of the meridian of Yucutan, and S. of the great bank of Bimane, and the Florida stream; and commands the entrance of both the gulfs of Mexico and Florida, and the windward passage; so that the Spaniards, who are the only possessors of it, may with a tolerable fleet not only secure their own trade, but annoy their neighbours. The command of this island is entrusted with a governor, or captain-general, who decides all affairs, civil and military; and its finances are under the direction of an intendant. It is divided into 12 jurisdictions, each of which has a magistrate. A chain of mountains extends the whole length of the island from east to west, and divides it into two parts; but the land near the sea is in general level, and flooded in the rainy season. Like most islands in the West Indies, it is subject to storms, but the climate is, upon the whole, healthy, and even temperate; for though in this latitude there is no winter, the air isrefreshed with rains and cooling breezes. The rainy months are July and August; the rest of the year is hot. The soil is equal in fertility to any in America, producing ginger, long pepper, and other spices; aloe, mastic, coffee, manioc, maize, cocoa, indigo, tobacco, and other principal productions, and it is supposed to have the most delicate flavour of any produced in the New World. The cultivation of sugar has lately been introduced; but the indolence of the inhabitants renders it in every respect much less productive than it might otherwise be. The quantity of coffee is inconsiderable. Not more than 1000 part of the island is cleared. The chief plantations are on the beautiful plains of Savannah, and are cultivated by about 25,000 slaves. The other inhabitants are paid to amount to about 30,000. Among the trees are oaks, firs, palms, cotton trees, ebony, and mahogany. In 1755 bees were introduced by some emigrants from Florida, and they multiplied so much in the hollows of old trees, that they soon obtained enough for their annual consumption. In 1777 they exported honey to the amount of 715,000 pounds. The island abounds with mules, hogs, fowls, fheep, hogs, and fine black cattle. The horned cattle have increased so much that the forests are filled with droves of them, which run wild, and are hunted and killed for their hides and tallow. The chief beasts of prey are parrots, turtle doves, and partridges; waterfowl are numerous; and on the coast turtles are abundant; mules and sillas are the principal fish. The copper-mines, which are in the eastern part of the island, furnish all the Spanish colonies with utensils of that metal; small pieces of gold and silver are collected in the sands of the rivers, which makes it probable that there are veins of these metals in the mountains. Few countries have better ports than Cuba; the most considerable and best known are the Havannah and St. Jago; which are.

cuba, a town of Portugal, in the province of Alentejo; 3 leagues N.N.E. of Beja.

cuba, in Mythology, a goddess among the Romans, thus called from cubo, I tie down, who was invoked in order to make children sleep.


Gen.
Gen. Ch. Cult. Perianth one-leafed, top-shaped, spreading, permanent, five-parted; divisions roundish, concave; four erect; the fifth and lowest larger, declining. Cor. Petals five, oblong, nearly equal, furnished with claws, inserted into the neck of the calyx; three upper ones erect; two lower ones declining. Stam. Filaments ten, villos at the base, inserted into the calyx below the petals; three upper ones shorter, filiform, erect, close-prefixed to the upper petals; the lower two longer, capillary, longer than the lower petals, and incumbent on them; anthers oblong. Pod. Germ oblong, pedicelled; style capillary; stigma acute. Peric. Legume long, conicaceous, villous, swollen, obliquely acuminate, one-celled. Seeds several, somewhat kidney-shaped.

Eff. Ch. Calyx top-shaped, five-parted. Petals five, nearly equal, irregular. Stamens inserted into the calyx, long, all fertile, three upper ones shorter. Pericarp a legume.

Sp. 1. C. paniculata. Mart. 1. Wild. 1. Aubl. Guian. p. 372. tab. 143. fig. 1. "Leaves pinnated; leaflets opposite." A tree sixty feet high, much branched at the top; smaller branches triangular. Leaves large, alternate; leaflets in five pairs, somewhat egg-shaped, acute, entire, green and smooth above, somewhat downy underneath, and of an ash-colored green. Stipules two, opposite, at the base of the leaf-rib. Flowers very numerous, on short peduncles, in long terminal trigonous spikes, which form an ample panicle. 2. C. tripetala. Mart. 2. Wild. 2. Aubl. tab. 143. f. 5. 2. "Leaves pinnated; leaflets alternate." Very similar to the preceding, and perhaps should be considered as a mere variety. Both kinds are natives of Guiana in woods, on the banks of rivers. The trivial name of the latter is ill chosen, the leaves in both having a triangular micrib.

CUBAGUA, in Geography, a small island about 8 miles long, near the coast of Guiana, in South America, between the island of Margarita and the continent, discovered by Columbus in the year 1498, and afterwards chiefly visited by the Spaniards for the sake of the pearls found on its coasts; but in 1524 the banks of pearls disappeared, and the fishermen, who were Indians from the Lucayos islands, were nearly exhausted. The soil is dry, barren, and nitrous, without fresh water, and producing little besides raffles. N. lat. 1° 55' W. long. 58° 1' 30".

CUBALMAROU, a river of the island of St. Vincent, which runs into the sea, in a bay of the same name, on the south coast of the island. N. lat. 13° 50' W. long. 61° 14' 30".

CUBAN, or CUBA, a province of the southern division of Russia, in Europe, in the government of Taurida, within the 45th and 47th degree of north latitude, bounded to the south by Circassia; to the west by the Black Sea, and the gulfs of Taman; to the north and north-east by the sea of Aqoph; and to the east by the government of Caucasus. It is a level and not very fertile country, inhabited chiefly by Tartars, who lead a wandering pastoral life on the banks of the Cuban, a considerable river, from which the country derives its name. Before their submission to the Russian empire, they had their particular khan or chief, and could bring 40,000 men into the field; but whole tribes of them have defected, and gone over to the Turks. They are of Mongolian origin, and a very unfettled people. Their inclination to rob has not yet been changed, though they have been much reduced by severe, capital, and merited punishments.

The Cuban palled under the domination of Russia, at the same time with the Crim or Crimea (which see), in the year 1784, and in the last treaty with the Ottoman Porte, the river Cuban was fixed upon as the boundary of the Russian empire in that quarter. This river falls into the Euxine or Black Sea. It is the Hypanis of the ancients. It rises in the Caucasian mountains, and is formed by the confluence of a number of small rivers. With the river Tumutsk it makes several islands between the sea of Aqoph and the Black Sea, of which one of the finest is the isle of Taman. A principal arm of the Cuban falls northward into the sea of Aqoph, and the other southward into the Euxine. The river in general, and the first arm in particular, has a rapid course and clear water; but that arm which falls into the Black Sea, flows in a very gentle current, has a troubled water, and forms at its mouth a pretty spacious bay, which however is so shallow that it can never serve as a haven.

The Cuban has neither rocks nor water-falls, and therefore is well adapted to being navigated with vessels that do not draw much water. It admits to the right the rivers Barakla and Barufka; to the left the Yaffik, Yaffi, Up, Saghrfa, Laba, Karaboken, and several other small rivers. In the mountainous part of the country, watered by the Cuban, its banks are very steep; but in the lower regions they are flat. Here the country is one continued Steppe, almost entirely delineated of wood, but in other respects tolerably fertile. The isle of Taman, which is considered as part of the Cuban, has an excellent, and in some districts ever verdant climate.

The mountains in the superior regions of the Cuban are thickly covered with forests; and not far from this river, at a place called Athurul, is a lake of salt water. Tooke's View of the Russian Empire. P. S. Pall's Travels through the Southern Provinces of the Russian Empire.

CUBATURE, or CUBATION, of a foli; the measuring of the space comprehended in a fol; as a cone, pyramids, cylinder, &c. or finding the solid content thereof. The cubature regards the content of a solid, as the quadrumate do the surfaces of a figure. See Solid.

CUBBITING, in Farriery. See Crib-biting.

CUBBRIDGE-HEADS, in Ship building, is sometimes used for the bulk-heads of the fore-castle, and the half-deck: the first being called the cubridge-head before; the other the cubbridge-head abaft.

CUBACABIA, in Geography, a considerable town of Africa, in the country of Darfur, situated on the road from Cobbe to Bergoo, and containing many inhabitants. This town is the key of the western roads, and the depot of all the merchandise that is brought from that quarter. A market is held here twice a week, in which the chief medium of exchange, for articles of small value, is salt, which the inhabitants make by collecting and boiling the earth of those places where horses, ashes, or other animals have been long stationery. This market is celebrated for a quantity of "tockes," and for the manufacture, if it may be so called, of leather, which they dexterously flipp of the hair, tan, and then form into large packs for corn, water, and other purposes. The "tockes" are cotton cloths, 5, 6, or 8 yards long, and from 8 to 22 inches wide; they are strong but coarse, and form the covering of the whole lower clas of both sexes. The inhabitants are chiefly Turians, who speak their own language, partly Arabs, and partly emigrants from some of the western countries, as Bergoo, &c. Brown's Travels in Africa, p. 238.

CUBDENSIS, in Ancient Geography, an episcopal see of Africa, in the proconsular province.

CUBE, in Geometry, a regular or solid body, consisting of six square and equal faces, or sides; and its angles all right, and therefore equal.

The
C U B E.

The word comes from κύβος, toffera, die.

The cube is also called hexahedron, because of its six sides. The cube is supposed to be generated by the motion of a square plane, along a line equal to one of its sides, and at right angles to it: whence it follows, that the planes of all sections, parallel to the face, are squares equal to it: and, consequently, to one another.

To describe a rot, or not, whence any given cube may be constructed, or with which it may be covered. On the right line A B (Plate III, Geometry, fig. 3.) set off the side of the cube four times: on A erect a perpendicular, A C, equal to the side of the cube A I, and complete the parallelogram A C D B: with the interval of the side of the cube, in the line C D, determine the points K, M, and O; let thus be the right lines, I K, I M, N O, and B D, Produce I K and I M, each way to E and F, and to G and H; till E K = K F, and G L = L M = M H, and draw the right lines E G, F H.

To determine the surface and solidity of a cube.—As the surface of a cube consists of six equal squares, a side multiplied by itself and the product by the side, will give the superficialities, and the same product, again, multiplied by the side, the solidity.

Hence, if the side of the cube be 10, the solidity will be 1000; if that be 12, this will be 1728: wherefore the geometrical perch being ten feet, and the geometrical erect twelve digits, &c. the cubic perch is 1000 cubic feet, and a cubic foot 1728 cubic digits, &c.

Hence, also, cubes are in the triplicate ratio of their sides; and are equal, if their sides be fo.

Cubes, duplication of a. See Duplication.

Cubes, or Cubic number, in Arithmetic, is a number arising from the multiplication of a square number by its root: or, it is formed by multiplying any numbers twice by themselves. Thus, if the square number four be multiplied by its root two, the fourth right is a cube or cubic number; and the number two, with respect to it, a cube root.

Also, the cubes of

1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
are . . . . 1, 8, 27, 64, 100, 216, 343, 512, 729, 1000.

Thus a table of cubes may be easily formed for any ferre of numbers.

Hence, since as unity is to the root, so is the root to the square; and as unity is to the root, so is the square to the cube: the root will, also, be to the square, as the square to the cube: that is, unity, the root, the square, and the cube, are in continual proportion; and the cube root is the first of two numbers that are mean proportions between unity and the cube.

All cubic numbers, whose root is less than 6, are 2, 7, 64, 125, being divided by 6, the remainder is their root itself. Thus, 8, being divided by 6, 2, the remainder of the division, is the cube root of 8. For the cube numbers beyond 125, as 216, the cube of 6, divided by 6, leaves no remainder; 343, the cube of 7, leaves a remainder of 1, which added to 6 gives the cube root of 343. And 512, the cube of 8, divided by 6 leaves 2, which added to 6, makes the cube root of 512. So that the remainder of the divisions of the cubes above 216, divided by 6, being added to 6, always gives the root of the cube number divided, till that remainder be 5, and, consequently, 11 the cube root of the number divided: but the cube number above this, being divided by 6, there remains nothing, the cube root being 12; thus, if you continue to divide the higher cubes by 6, you must not add the remainder of the division to 6 but to 12, the first multiple of 6, and thus coming to the cube of 18: the remainder of the division must not be added to 6, nor to 12, but to 18; and so on in infinitum.

M. de la Hire, from considering this property of the number 6, with regard to cubic numbers, found, that all other numbers raised to any power whatsoever, had each their divisor, which had the same effect with regard to them that 6 has with regard to cubes. And the general rule he has discovered is this; if the exponent of the power of a number be even, i.e., if that power be raised to the 2d, 4th, 6th, &c. power, it must be divided by 2; and the remainder, if there be any, added to 2, or to a multiple of 2, gives the root of the number corresponding to its power, i.e., the 2d or 6th root, &c. But if the exponent of the power of the number be uneven, i.e., if it be raised to the 3d, 5th, 7th, &c. power, the duplicate of that exponent will be the divisor, which shall have the property here required.

It appears, from a due examination of the cubes of the natural numbers, that their third differences are all equal to each other, being the constant number 6. Let m, n, p, &c. be any three adjacent cubes in the natural series of cubes; that is, let them be such whole roots m, n, p, have the common difference 1; then because n = m + 1, we shall have n* = m" + m" + m+1; and because p = n + 1, we shall have p" = n" + n" + n + 1. So that the differences between the 1st and 2d, and between the 2d and 3d cubes, are

n"−m" = 3m"+3m+1
p"−n" = 3n"+3n+1

the 1st difference, and the difference of these differences, viz. 3m"+3m+1 − 3n"+3n+1
= 3. n"−m" + 3.n−m = 3.n+m+1 = 6.m+1 = the 2d difference. In like manner the next second difference is 6. n+1; and the difference of these two differences is 6. n−m = 6, which is therefore the constant third difference of all the series of cubes. And hence that series of cubes will be found by addition only; viz., by adding always the 3d diff. to the column or series of 2d differences, and adding these always for the first differences, and again adding these always for the cubes themselves, thus:

<table>
<thead>
<tr>
<th>1st Differences</th>
<th>2nd Differences</th>
<th>3rd Differences</th>
<th>Cubes</th>
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<tr>
<td>6</td>
<td>48</td>
<td>169</td>
<td>62</td>
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Peletrarius, among various speculations concerning square and cubic numbers, shews that the continual sums of the cubic numbers, whose roots are 1, 2, 3, &c. form the series of squares whose roots are 3, 5, 10, 15, 21, &c.

Thus:

1 + 8 = 9 = 3*
1 + 8 + 27 = 36 = 6°
1 + 8 + 27 + 64 = 105 = 10°, &c.

Or, in general, 1 + 2 + 3 + 4 + &c. to n° = 1+2+3+4+.....n° = n(n+1)/2. It is also a property of these cubic numbers, that any number, and the cube of it, being divided by 6, leave the same remainder; the feries of remainders being 0, 1, 2, 3, 4, & 5, continually repeated. Or, that the differences between the numbers and their cubes,
CUB

cubes, divided by 6, leave always 0 remaining; and the quotient, with their successive differences, form the several orders of figured numbers. Thus:

<table>
<thead>
<tr>
<th>Num.</th>
<th>Cubes</th>
<th>Diff.</th>
<th>Quot.</th>
<th>1st Diff.</th>
<th>2d Diff.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>2</td>
<td>8</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>27</td>
<td>24</td>
<td>4</td>
<td>3</td>
<td>2</td>
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<tr>
<td>4</td>
<td>64</td>
<td>60</td>
<td>10</td>
<td>6</td>
<td>3</td>
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<tr>
<td>5</td>
<td>255</td>
<td>224</td>
<td>20</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>610</td>
<td>501</td>
<td>35</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td>243</td>
<td>210</td>
<td>35</td>
<td>15</td>
<td>5</td>
</tr>
</tbody>
</table>

Cubical numbers, for the composition of: Every cubic number of a binomial root is composed of the cubic numbers of the two parts of the factor, and of thrice the square of the first part into the second, and of the factor or thrice the square of the second part into the first.

Dimens. For a cubic number is produced by multiplying the square by the root; but the square of a binomial root is composed of the squares of the parts, and double the factor of one part into the other.

Wid-metare, the cubic number is composed of the cube of the first part, of the triple factor of the square of the first part into the second, and of the triple factor of the square of the second part into the first. An ocular demonstration of this we have in the following example, where multiplication alone is used. Suppose, v. gr. the root 24, or \( x + 4 \).

Here

\[
24^2 = 22^2 + 2 \times 4 \times 22 + 4^2
\]

\[
20^2 + 2 \times 2 \times 20 + 4^2
\]

\[
20^2 = 8000
\]

Then

\[
3 \times 4 \times 22 = 4320
\]

\[
3 \times 4^2 \times 4 = 64
\]

\[
24^3 = 13824000
\]

\[
3 \times 240^2 \times 3 = 518400
\]

\[
3 \times 240 \times 3^2 = 6480
\]

\[
3^3 = 27
\]

\[
243^3 = 14348907
\]

The places of the several factors are determined from what was observed above: for regard must here, too, be had to the ciphers to be added to the numbers multiplied by each other, if they be placed alone.

This composition of cubic numbers once well conceived, the extraction of cubic roots will be easy.

Cubic Root, or Cubic root, the origin of a cubic number, or a number by whole multiplication into itself, and again into the product, any given number is formed.

The extraction of the cube root is the same thing as the finding any number, v. gr. 2; by whose multiplication into itself twice continually, a given number, v. gr. 8, is produced: the process whereof see under the article Extraction.

Cubeds, in Pharmacy, a fruit brought from the island of Java, Guinea, &c. in grains or seeds, resembling pepper, both in form and size; whence some call it "did pippur.

This is a small round fruit or berry, rather less than pepper, with a dark-brown wrinkled outside, and whitish within, having a little short stalk at one end; whence it has been called piper caudatum, or pepper with a tail. It is not near so hot and biting as pepper, but is of an aromatic smell and taste. It is the fruit of the Piper cubedo; which tree.

Cubes were deemed, by former medical practitioners, heat producing, and laid to strengthen the stomach, expel wind, comfort the brain and nerves, and to be particularly useful against the vertigo or giddiness, with other disorders of the head.

They were recommended in a hoarse-er and loss of voice, especially when the tonsils were flushed and obstructed. The decoction was from ten to twenty-four grains in substance, to be chewed, or from a dram to a dram and a half in infusion.

They were farther recommended in disorders of the spleen, and in cold discontents of the uterus. They have the same qualities, though in a weaker degree, with the other kinds of pepper. See Piper.

It is said the natives of the place boil it before they allow it to be exported, to prevent its being found in other countries.

Cuben, in Antiqu Geography, a town of Asia, in Armenia.

Cubert, or Cubly, in Geography, a village in Cornwall, in the hundred of Powder. In the government trigonommetrical survey in 1795, the situation of the village was determined by an observation from St. Agnes' station, distant 55,224 feet, and bearing 42° 26' 53" S.W. from the parallel to the meridian of St. Agnes, and another from Henrarrow station, distant 69,131 feet, whence is deduced its latitude 50° 22' 43.5"; and its longitude 5° 5' 50.7". or 20° 23.3' W. of Greenwich.

Cubic Equation. See Equation.

For the construction of cubic equations, see Construction.

— For the resolution, see Solution. — For their root, see Root, and Extraction.

Cubic Foot. See Foot.

Cubic Hyperbola, in Conics, one expressed by the equation \( xy^2 = a \), having two asymptotes and consisting of two hyperbolae, lying in the adjoining angles of the asymptotes, and not in the opposite angles, like the Apollonian hyperbola. It is also called by Newton, in his " Enumeratio linearium tertii ordinis," an hyperbo'lisynus of a parabola. See Hyperbola.

Cubic Numbers. See Cube.

Cubical Parabola. See Parabola.

Cubicle. See Chamber.

Cubiculium, among the Romans, a bed chamber.
This name was also given to the balcony or loggia, in which the emperors were placed at the public games.

CUBIDIA, in Natural History, the name of a genus of insects. The word is derived from κυβίδης, a dice, and is given them from their being of the shape of a common dice, or of a cube figure. These bodies owe this shape to an admixture of particles of lead, and there are only two known species of the genus. A. cubidos, called one, with thick flakes, found in the lead-mines of Yorkshire, and some other parts of the kingdom. And, 2. A milky-white one, with thicker crusts. This is found in the lead-mines of Derbyshire and Yorkshire, but is usually small, and is not found plentifully.

CUBIL, in Ancient Geography, a people placed by Ptolemy in the vicinity of the Marszado lake.

CUBING of a Solid. See Cubature and Solids.

CUBIT, a long measure, used by the ancients, especially the Hebrews; taken from the ordinary extent of a man's arm, between the elbow and the tip of the hand.

In the Scripture, we find cubits of two lengths; the one equal, according to Dr. Aturhnot, to 1 foot 9 inches or 5/3 of an inch, our measure; being the fourth part of the fathom, double the span, and six times the palm; the other equal to 1 1/8 foot, or the four hundredth part of a stadium. The Romans, too, had a cubit, equal to 1 English foot, 5 inches, 15/32 of an inch. F. Merienne called the Hebrew cubit 1 foot, 4 digits, and 5 lines, with regard to the foot of the Capitol. According to Heron, the geometrical cubit is 20 digits; and, according to Vitruvius, the foot is 3 of the Roman cubit, i.e. 16 digits, or finger's breadth.

The cubit was a measure of length used in England in the earlier period of its history, when the different parts of the body, &c. were referred to as measures on different occasions, without much regard to their exact relation to each other, but which subsequent writers have thus ascertained. The English cubit of forearm = 564 hairs' breadth = 54 barley corns = 24 digits or finger's breadth = 28 inches = 0.8895 French pouces, or thumb's breadth = 8 nails = 6 palms, or hand's breadth = 4 1/2 hands, or clenched hand's breadth = 3 palms = 1 1/8 foot = 1/4 a yard, or whole arm = 1/2 pace or fathom = 1 1/4 English ell or arm = 1 1/2 fathom, or arm's reach = 1/2 pole, or rod = 2,727 links = 2,346 toise of France = 4750 metre of France.

CUBITAIUS EXTERNS, or ulnaris, in Anatomy, the first of the extensor muscles of the fingers; thus called, as being placed along the cubitus externalis. It arises from the external protuberance of the humerus, and, passing its tendon under the cuneiform annularis, is inserted into the fourth bone of the metacarpus, that fultains the little finger. See ULNARIS EXTERIOR.

CUBITAIUS INTERNUS, the first of the flexors, placed along the cubitus, withinside the arm. It arises from the internal protuberance of the humerus, and, passing its tendon under the cuneiform annularis, and is inserted by a strong and short tendon into the fourth bone of the first order of the carpus.

CUBITALIS, from cubitus; is an adjective used sometimes in naming parts which are connected with, or adjacent to, the ulna; hence we have a cubital artery and nerve, and cubital muscles.

CUBITA BICAPS. See Biceps.

CUBITUS, a term applied to the ulna.

CUBITUS, fractured and luxated. See Fracture and Luxation.

CUBITUS, a measure of length, adopted by Linnaeus for describing the dimensions of plants = 17 French inches = 204 lines = 18.11775 English inches = 1.50981 English feet.

CUBLANC, in Geography, a small town of France, in the department of the Corrèze; 12 miles S.W. of Brives. CUBO-CUBO-CUBUS. See CUBUS-CUBIS.

CUBO-CUBUS, the term whereby Diophantus, Vieta, &c. distinguish the sixth power; which the Arabs call quadratum cubi.

CUBOIDES Os, in Anatomy, one of the bones of the thumb. See Skeleton.

CUBROS GEZIRA. See Zeira Cubros.

CUBU-CUBUS, a name whereby the Arab writers, and those who follow them, denominate the ninth power, or a number multiplied eight times by itself continually; with which Diophantus, and after him Vieta, Oughtred, &c. call cubo-cubus.

CUCADA, or CUCUNDA, in Ancient Geography, a town of Asiatic Sarmatia, placed by Ptolemy near the river Bureus.

CUCANA, in Geography, a town of Italy, belonging to the state of Venice, in the country of Friuli; 7 miles W. of Palma di Novara.

CUCASBIRI, in Ancient Geography, one of the fortresses of Thrace, constructed by Julianus in the province of Rhaetia.

CUCHIARA, in Geography, a small island in the Adriatic, near the coast of Naples; 6 leagues N.W. from Venice.

CUCCI, or Cucumis, in Ancient Geography, a place of Pannona, near the Savus, placed, in the Itinerary of Antonine, between Bononia and Carnacum; and supposed to be the present Crefeldt or Curufca.

CUCHECUNNA, in Geography, a town of Asia, in the country of Candahar; 68 miles W.N.W. of Candahar.

CUCKFIELD, a market-town in Sussex, in the Rape of Lewes, is situate in a high and commanding situation, although it is built upon the lowest stratum in the fens, which any where makes an extent of surface, in the road between London and Brighton. About two-thirds of a mile south of the town, this stratum produces a quarry of tolerable free-stone, with which anciently the town was built; it is a yellowish flint, where grit is exceeding fine, and the lower beds in the quarries have numerous black ferrugious pebbles or joints between the flint; under which is a piper clay stratum, producing wood-coal in detached pieces (i.e. Coal and Collier); and this clay it terms to be, which holds up the water in the very dislocated and porous district in which this town stands, and supplies the wells therein with water, but rather feebly. This is a neat pretty town, the foot-paths being paved with red paving-bricks, of a very fine and durable quality, manufactured from a stratum of red pottery clay, which appears about four miles south of this town. Some parts of the flint found in this Cuckfield flint stratum are separated by layers of mica, which fits it for splitting; so that, as formerly to have been much used for flinting buildings, other parts are separated by curious wavy joints, that present matter of curious speculation to the naturalist. The land round this town, particularly on the south side, is of good quality. The spire of the church is furnished with a conical steeple, and, like most others in Sussex, is covered with wooden flanges, which have assumed a blue cast, exactly resembling slate in colour and appearance. Its situation was determined in the government trigonometrical survey in 1793, by an observation from Ditchling Flagon, distant 3° 56' feet, and bearing 15° 20' 5" S.E. from the parallel to the meridian of Greenwich, and another from Chantury, distant 67,789 feet; whence it is deduced its latitude 51° 5' 18.7" N, and longitude 0° 8' 29.6" or 34.1 W. of Greenwich.
CUC

CUCKING STOOL, CoKestool, or Castigatory, anctly called number and trebucked; an engine for the pu-
nishment of scolds and unquiet women, by ducking them in 
the water. It is frequently corrupted into ducking-box, 
because the residue of the judgment is, that when they are 
placed in it, they shall be plunged in the water for their pu-
nishment.

Kitchen says, “Every one having a view of frank-pledge, 
ought to have a pillory and a tumblem.” This machine was 
much in ufe, even among our Saxon ancestors, who called it 
feol3Syifke, or folding-box.

The punishment was anciently also inflicted on brewers, 
and bakers, transgressing the law; who were therupon, in 
such a rool or chair, to be ducked in flerox, tone muddy 
or flinking pond. This was anctly written gating floos; 
in Domeflay it is called catheda flores.

CUCKMORE, in Geography, a river of England, which 
rins into the sea 3 miles W. of Beachey head.

CUCKOLD’S Point, a cape on the E. coast of the 
ifland of Barbadoes. N. lat. 15° 32’. W. long. 58° 25’.

CUCKOW, in Ornithology. See CUCULUS.

Cuckow, green yellow bellied, of Edwards. See Tro-
gon Curvulii.

Cuckow-Flower, in Botany. See Cardamine pru-
tenst.

Cuckow-Flower, in Agriculture, is the name of a plant, 
the (femina flores), which is a common weed in mea-
dows and pastures. It is likewise denominated meadow 
cuckow-flower, meadow phile, rugged robin, &c.

Cuckow-Lamb, in Rural Economy, is a name applied in 
some districts to such a lamb as is yeaned in April, or 
the following month, because it falls in what is termed 
cuckow-time. There are generally either the lambs of 
younger or very old ewes, occasioned by their taking ram 
hare in the fallow. These lambs are usually of the weakest 
and smallest sort, and therefore both the ewes and lambs should 
have the bell keep, in order to fatten the lambs for the 
butcher; as such diminutive lambs are improper to be kept 
for lorc-keeph flock in molt cafoes, except where necessity 
obliges the farmer to have recourse to them.

Cuckow Pint, in Botany. See ARUM.

Cuckow-Spit, in Agriculture, a name sometimes applied to 
the frothy fubstance which is occasionally observed on 
plants, and which is supposed to afford protection to 
infests from the heat of the sun, and the attacks of the 
spiders. But it has been suppoited by Mr. Lille to be nothing 
more than the nocturnal dew which depends upon the fork or 
joint of the plant, and which is worked into a froth by the 
infests.

Cuckoo. See Cooscoudoo.

CUCULUS, in Geography, a small town of France, in the 
department of the Taun, 18 miles N. of Catsres.

CUCUBALUS, in Botany, (Plin.) Tournefort, Cl. 8. 
Clubs and order, decandria tricygia. Nat. Ord. Caryophiliæ 
Linn. and Jeff.

Gen. Ch. Cal. one-leafed, inflated, five-cleft half way 
down, permanent. Cor. Petals five; clasps nearly the length of 
the calyx, generally more or less crowned; expansion fe-
mu-bifid. Stam. Filaments ten, awl-shaped, inflected 
alternately into the clasps of the petals; anthers oblong. Fyl. 
Germ pedicelled, globular, smooth; stylæ lineal, villos 
their whole length on the interior side; ligulas acute. Pi-
rie. Berry black, thinning, sphericall, soft, pulpy, not de-
hiscet, at frant three-celled, but afterwards the partitions 
shovel up, and disappear. Seeds numerous, attached to a 
free central receptacle.

CUC

Eff. Ch. Calyx one-leafed, inflated. Petals five, fur-

nished with claws. Berry superior, finally one-celled. Seed 
numerous.

Eng. Bot. 1557. Gart. tab. 77. fig. 7. (Silene baccif-
257. Alone fandens baccifera; Bauh. pimo. 250. Vife-
go; Hall. Helv. n. 912. Lycranius volthi, Gmel. in 
Act. Petrop. 1759. v. 14. 225. tab. 17. fig. 11.) Berry-
borne chickweed. Root perennial, creeping. Stem 
several, annual, three feet long, weak, straggling, much 
branched, dichotomous, cylindrical, hollow, rough with 
deflexed hairs. Leaves opposite, petiolated, widely spred-
ing, egg-shaped, acute, entire, pubescent, pale green, re-
sembling those of itsalian nemorum. Flowers axillary and 
terminal; calyx large, bell-shaped, membranaceous, pubescent; 
segments reflexed as the fruit ripens; petals green-on-white, 
distant. A native of France, Italy, Switzerland, Germany, 
&c.; admitted as an English plant by Dillenius into his 
edition of Ray’s Synopsis; on the authority of specimens 
sent to Dr. Richardson by Mr. Fowkes of Llandeir, near 
Ruthin, and said to have been gathered in the ifland of 
Anglesea; but no other botanist has been fortunate enough 
to find it there, or in any other part of Great Britain.

Obi. The only effential difference between this genus and 
filene, as settled by Linnaeus, and received by most suc-
ceeding botanists, is the want of a crown to the end of 
its petals. It has been justly observed by L. Marek, that 
this distinction is not only purely arbitrary, and separates 
plants which are closely united by other natural characters; 
but also that it is itself by no means in all cases suffi-
cently clear and determinate; the crown being occasionally 
oblige in some plants, which generally have it distinctly 
marked, and always so small in others, as to make it scarcely 
visible, and to occasion a doubt to which genus the plant 
ought to be referred. He adds, but rather inconsistently, 
that he has retained the Linnean distribution solely for 
the sake of facilitating the study of the species, as those already 
arranged under filene are very numerous, and difficult to 
determine. Gattner and Dr. Smith have restored Tourne- 
fort’s original generic character of cucubalus, and considered 
the plant before us as the only species hitherto known. We 
adopt without hesitation the idea of these eminent botanists, 
and refer all the species which have a real capsule to the 
genus filene.

CUCJUS, in Entomology, a genus of coleoptera, es-
tablith by Fabricius, and adopted by Gmelin, in the last 
edition of the Linnean Systema. The character of the 
genus, after the Linnean method of classification, con-
forms in having the antennæ filiform; feelers four, and 
equal, the extreme joint truncated, and thicker; lip short, 
bitld, with linear acdent divisions; and the body depressed.

Three of the species belonging to the present genus were 
known to Linneus; these are, depressif, ceratus, and fla-
vipes. The frant he considers as a cantharis, and describes 
under the specific name of sanguinolenta; the ceratus is 
the tenchiro depressif of that author, and the flavipes his 
cerambyx planatus. Swedcrus gives two new species (mu-
culatus and rufus), in the Stockholm Transaktioner, the 
rett were decribed originally from various cabinets by Fa-
bricius, who, with much propriety, embodied this na-
tural tribe into a distinct genus. This effential or genric 
character is far laid down by Fabriucus, is chiefly taken, as usual 
under the System of that author, from the structure of the 
month; the four equal feelers having the extreme joint 
truncated, and thicker; the short bitlid lip with linear dif-
tant
tent divisions; and the antenna being moniliform and filiform, constitute the Fabrician character of the cucujus genus.

Species.

DEPRESSUS. Thorax denticulate, and with the wing-cases rusful; legs simple and black. Fabr. Cantharis fun-guinalenta, Linn.

The antennae are hairy and black; head depressed with an obtuse-angular globus each side. A native of Germany, according to Prisch and Hattorf.

SULCATUS. Thorax grooved, black; wing-cases marked with creased flake. Found in a purplish wood in Croatia. Saldner.

RUFUS. Thorax fulcated; wing-cases black and punctured; antenna and legs ferruginous.

This is the largest species of its genus, and is found in rotten or decaying wood in Bavaria. The antennae are pale ash, with the first joint black; thorax narrowed behind, and marked with three distinct grooves.

FLAVIPES. Thorax fulcated and black; wing-cases striated and blue; abdomen rufous. Fabr. Tenebrio depressus, Linn.

Found in Germany. The head is black, with the mouth pieces: legs black.

FESTIVUS. Thorax fulcated, black; wing-cases striated, blue; margin of the abdomen, and flanks rufous.

Inhabits the same country as the preceding, and is about half its size.

CASTANUS. Thorax fulcated, black; wing-cases striated; margin of the abdomen and the legs tesselaceous.

Described from the cabinet of Smidt as a native of Germany.

DUBUS. Thorax denticulated and rufous; wing-cases black; antennae disform, and the length of the body.

Fabr.

Native of North America. The antennae are very long, and flexuous, with the last joint acute, in which latter particular it differs from the rest of the genus; it does not appear to us as strictly appertaining to this genus.

FLAVIPES. Thorax denticulate and black; legs yellowish; antennae length of the body. Fa'r. Cerambyx planatus, Linn.

Inhabits northern Europe, and preys on bark of trees.

Dermestoides. Thorax fulcated, and fuscous; wing-cases smooth and tesselaceous.

A small species found in Germany. The antennae are short. Thorax marked with two grooves. Smidt.

TESTACEUS. Thorax somewhat square, unarmed; body tesselaceous; thighs compressed.

Inhabits Europe, and is found under the bark of the birch-tree.

MUTICUS. Thorax unarmed and black, with an impressed dot each side; wing-cases fuscous and striated.

Found in Germany. Hattorf.

MONILES. Thorax unarmed, black; margin with spots on the wing-cases, ferruginous.

A native of Germany.

RUFUS. Rufecent; antenna, feders, and legs black; head gibbous; wing-cases fuscous. Sweederus Nov. Act. Stockh. Inhabits the island of Sumatra.

MACULATUS. Sordid yellow; thorax unequal, squarish; legs, and subquadrangular spot on the wing-cases, black. Sweederus.

CUCULARIS MUSCULUS, in Anatomy, a name under which the trapezius muscle is frequently described.

CUCULLA, a cowl. See Arbor, and Cowl.

CUCULLANUS, in Natural History, a genus of worms. Vol X.

which infect the intestines of various quadrupeds, birds, and fishes. The character of the genus consists in the body being sharp-pointed behind, and obtuse before: the mouth orbicular, with a flattened hood. Several species and varieties of these destructive creatures have been detected by the continental naturalists, especially by Goeze and Müller, who observed most of them to be viviparous.

Species.

* Insectis the Mammalia.

TAPE. Inhabits the common mole of Europe.

This foot is gregarious, and lives included in a membrane spirally twisted in the fat about the thorax. Goeze. OCREATUS. Body fuscous; tail ferruginous. Found by Goeze in the intestines of the mole; this creature is believed to be of the oviparous kind; it resembles a piece of straw, is about two inches long, and lives in clutters or societies.

Muris. In the latter intetines of the mole. Goeze.

*** Insectis Birds.

Buteonis. Inhabits the intetines of the buzzard. Goeze.

*** Insectis Reptiles.

Rana. Tail fuscous.

Infests the intetines of the frog.

*** Insectis Fishes.

Lacusiris. Body rufous, the anterior part truncated. Müller.

Several varieties of this kind of worms are described by writers. Goeze speaks of one (var. a) peculiar to the common eel; another (perca) to the river perch, and a third (lacuisperca) to the perca lucisperca. Müller and Pallas observed another variety (carmus), in the ruffe, and Goeze two others, one in the salmon (fariana), and another in the trout (falaris). All these are very fertile, and generally infect the intetines; the last mentioned kind is found also in the liver.

Ascaroideas. Head orbicular, and hooked each side; tail rounded, short, and pointed, with two exerted spicles. Infests the stomacht of the fiorus (fiorus). These are about an inch long, of a greyish-white colour, resemble the maggot of a mufs fly, and live together in clutters.


There are two varieties of this kind, cirratus and muticus, the drift of which, as the name implies, is furnished with cirri, the other is unarmed; these are oviparous, and are found in the intetines of the common cod-fish. The body of this species is long, flexuous, round, pellucid, and very finely striated across; the head broad, gut orbicular, and appearing as if burnt on the fore part. The male is armed with blackish, fetaceous, bicuspidate prickle at the tail, near the vent; female dislinguished by a tubercular aperture in the middle of the body.


Gen. Ch. Cal. Persnath one-leaved, deeply four-parted; segments roundish, unequal; two upper ones smaller, dilated. Cor. Petals four, unequal, inserted into the calyx; upper one ascending, wedge-shaped, hollowed, emarginate; lower one larger, interely egg-shaped, rounded, concave; two lateral ones smaller, vertical, oblone, covered on the lower side by the larger petal; claws broad, short. And. at the base of the upper petal, corniculate, long, incurved,
Curved, obtuse, prominent between the upper dilatant segments of the calyx. **Stam.** Filament filiform, petal-shaped, oblong, growing broader before, cowled at the top, inverted into the bottom of the calyx below the germ, longer than the lower petal, and incumbent on it; cells of the anther two, sepacated, linear, adnate to the filament within the cowl. **Pfyl.** Germ egg-shaped, three-furrowed; style filiform, recurved, incumbent on the upper petal; stigma flat, curved below. **Peric.** three-celled. **Seeds** numerous.


**Cucullaria.** Busb. See *Valantia cucullaria.*

**Cucullate Flowers,** among *Botanizes,* are such as resemble a cucullus, or monk’s hood, or cowl. See Cucullus.

**Cucullus.** was anciently a traveller’s cap; called also coul, goul, or gula: whence the name passed to the monks, among whom it signified their frock and cap, which were of one piece.

**Cuculus,** in Botany, is used by professor Willdenow to express a peculiar kind of *Nelthiorum,* or honey-bag, quite distinct from the other parts of the flower, as in *Aceratum,* or Monk’s Hood, in which the part in question is double, standing on a pair of flanks, and looking like a couple of little birds. In *Apulegia,* the columbia, there are five honey-bags, ranged alternately with the petals. The term is also applied, by the same author, to a very different organ, which is the blossom of the hedge-sparrow, water wagtail, or yellow hammer, and leaves the care of the young to their foster parents. The cuckow comes into England about the middle of April, or at least its note of love is heard for the first time in the season about that time. It is only the male that sings, and his note ceases before the end of July, though the cuckow does not take their final leaf till the end of September, or beginning of October. They migrate from the north of Europe at the close of summer, and pass the winter in the warmer parts of Africa.

The rufous cuckow, *le coucou roux de Griffon,* is a variety of this bird.

**Cucullus.** in Ornithology, the cuckow genus. These are of the pica order; their bill is smooth, and a little curved; nostrils surrounded by a small rim; tongue fagitate, short, and pointed; feet formed for climbing. As a secondary character, it may be added, that the toes are usually placed two forward, and two backward, and the tail cucvated, and confining of about ten soft feathers.

**Species.**


One of the species of cuckow, found at the Cape of Good Hope; its length is about twelve inches; bill and legs brown, the irides yellow.

**Glandarius.** Tail wedge-shaped; head somewhat crested; wings brown spotted with white and cinereous; band over the eyes black. *Cuculus glandarius,* Linn. *Cuculus Andalusif,"* Briff. *Le grand coucou tacheté,* Buff. Great spotted cuckow.

This is the size of the magpie. The bill is black; creb blue-throat; shoulders, upper wings, and tail-coverts brown spotted, quill-feathers brown; tail blackish, with the tips white. Inhabits Andalusia.


This is the cuckow common to the British isles, and which extends also throughout most part of Europe, Asia, and Africa. The length of this bird is about fourteen inches, the bill black, and two thirds of an inch long; the plumage in general cinereous, transversely barred with deep brown or black streaks; the two middle tail-feathers black, with the tips white, the rump marked with white spots on each side the shafts, and the legs short and yellow. The female differs a little from the male, the neck both before and behind being of a brownish-red, the tail barred with the same colour, and black, and spotted on each side the shaft with white. The young are brown mixed with ferruginous and black.

These birds feed principally on insects, or when brought up from a young flate, as they sometimes are, they will eat bread and milk, fruit, eggs, and flesh, either cooked or raw. It is well known that the cuckow does not hatch its own eggs, but deposits the eggs in the nests of some other birds, generally those of the hedge-sparrow, water wagtail, or yellow hammer, and leaves the care of the young to their foster parents. The cuckow comes into England about the middle of April, or at least its note of love is heard for the first time in the season about that time. It is only the male that sings, and his note ceases before the end of July, though the cuckows do not take their final leaf till the end of September, or beginning of October. They migrate from the north of Europe at the close of summer, and pass the winter in the warmer parts of Africa.

The rufous cuckow, *le coucou roux de Griffon,* is a variety of this bird.


About the size of a magpie, and nineteen inches long; it inhabits Otaheite, where it is called by the natives *arawaiera.* The fame species is also found in New Zealand and Tongatapoo.

**Mindanaensis.** Tail roundiate; body golden-green spotted with white; beneath white, undulated with blackish. *Cuculus Mindanaef,"* Linn. *Le coucou varié de Mindanao,* Buff. Mindanao cuckow.

Larger than our common cuckow, and measures fourteen inches and a half. It inhabits Mindanao, and other of the Philippine islands.


Length fourteen inches. This species inhabits Bengal. The bill is dirty yellow-green; the plumage on the upper part rufous, with the feathers edged with brown; wing-coverts white, edged with brown; quills and escapulae transversely frizzled with brown, and rufous; tail concave, seven inches and a half in length, subfuscous, and crossed with oblique broad bands and brown; legs dirty greenish-yellow. In Bengal this bird is known by the name of Boutalliaif.

**Maculatus.**
**CUCULUS.**

*Maculatus.* Tail elongated; body grey-green, glossed with fulvous, and variegated with white spots; beneath fuscated with brown and white; head black. *Cuculus maculatus,* Linn. *Coucou tacheté de la Chine,* Buff. Chinese spotted cuckow. Lath. Syn. Inhabitats Bengal and China; length fourteen inches.


Larger than the common cuckow. The female differs in having the rufous spots on the upper part less numerous than in the male, and the under surface paler. The species is found in the East Indies, and in the Philippine islands.


Inhabitats the island of Panay. The beak is black; irides yellow; legs lead colour.


Size of a pigeon; length sixteen inches; bill and legs greyish. A native of India. A variety of this bird about fourteen inches in length is found in Mindanao, and another not longer than a blackbird in Bengal.

*Indicus.* Tail round; body black; wings, and tip of the tail with three irregular transverse white lines. *Cuculus Indicus,* Gmel. Eastern black cuckow. Lath.

Inhabitats India, flies in flocks, and feeds on insects. Length sixteen inches. Bill brown and whitish; legs blueish.


Found in Jamaica, where it frequents woods and hedges all the year round; and feeds on seeds, small worms, and caterpillars, as well as the smaller kinds of serpents, frogs, lizards, and small birds. This bird is of such a gentle disposition, as to suffer the negro children to catch it with their hands. Its length is fifteen inches. This bird is said to be unusually noisy before rain, whence it has obtained the name of rain-cuckow, or long-billed rain-cuckow.


Inhabitats the same country as the last; length from sixteen to seventeen inches long, and sings before rain. Both this and the former species are known in Jamaica by the name of Old Man.

*Minor.* Olive-sh, beneath reddish; chin white. Mangrove cuckow.

Length twelve inches; its general appearance much resembling the rain-bird. It inhabits Cayenne, and lives on insects, especially those large caterpillars which feed on the leaves of the mangrove.

*Serratus.* Tail coniciform; head crested; body black and glossy; on the wing a white ferrated spot. *Cuculus serratus,* Muf. Carli. Crested black cuckow. Lath.

Inhabitats the Cape of Good Hope. This bird is twelve inches and a half in length; the tail rather longer than the body; plumage of the thighs lax and long; legs black.


The length of this bird is fifteen inches and a half, its bulk exceeding that of our common cuckow. This bird inhabits Senegal. The bill is black; rump and upper tail-covers brown, with deeper streaks; quill-feathers rufous, with brownish tips; legs grey; the inner hind-claw straight and longer.


Rather larger than a lark, and, like that bird, having the hind toe furnished with a long straight claw. This curious species inhabits Bengal.


Inhabitats Malabar, and being a great enemy to snakes and other noxious reptiles, is held sacred by the natives. Its length is eleven inches and a half.

*Punctulatus.* Tail conic; body brown, the tips of the feathers sub-rufous; beneath dirty-white. *Cuculus punctulatus,* Gmel. Punctated cuckow. Lath.

Native of Cayenne; length nine inches.


Found in the woods of Brazil. The bill is yellowish; irides fulvous; and the legs fusc-green.


Length twelve inches. Inhabitats Carolina, principally in woods.

*Pisanus.* Tail conic; body above variegated with white and black, beneath white; head black, crested; chin and breast rufous. *Cuculus pisanus,* Gmel. Pitchen cuckow. Lath.

Taken at Pifa in the year 1739. Its size rather exceeds that of the common cuckow.

*Milanolucus.* Black, beneath white; tail coniculated with the tip white; wings with a white spot; head sub-crested. *Cuculus melanolucus,* Gmel. *Jacobin buppy de Coromandel,* Buff. Coromandel crested cuckow.

Length eleven inches. A native of Coromandel. The bill is black; legs fulvous.


Measures twenty-one inches and half in length. The species inhabits Madagascar.

*Chrysocolphalus.* Head yellow; breast and shoulders lead colour; quill-feathers black; tail yellowish-brown, with numerous black bars. Gmel.

Inhabitats South America.

*Dominicus.* Tail wedged; body grey-brown, beneath white;
CUCULUS.

The length of this bird is seven inches. The bill is brown at the base, and surrounded with bristles; feathers of the thighs white, with a longitudinal black streak; quill-feathers above brown, beneath grey-brown; the eight tail-feathers are very narrow and rufous, the next footy, the inner edge whitish.

The manners of this bird, according to Dr. Sparrman, who particularly describes it, are very singular. The bird feeds principally on honey; and by its note, when in quest of this favourite food, points out to the natives the hiding-places in the trees where the wild bees deposit their flowers. The morning and evening are the times of its feeding; and it has a trill note, which the Hottentots call Dutch hunters carefully attend to, and answer from time to time, till the bird appears in flight, on which they follow it, till it alights on the trees in which the honey is concealed. The hunters never fail to reward their guide with a portion of the booty. Dr. Sparrman affirms us, that he has several times been present at the taking of the nests of the wild bees in this manner; but could only obtain two specimens of the birds, both of which were females: the inhabitants highly value the bird for its useful habits, and conceiving it criminal to destroy it. A nest was shown Dr. Sparrman, with an assurance of its belonging to this bird: it was composed of slender filaments of bark, interwoven into the form of a bottle: the neck and opening being downwards, and a string, in an arched manner, was suspended across the opening, and fastened to the two ends, lopped to be contrived for the bird to perch upon.


Inhabits various parts of Africa, and feeds on vegetables.

REGUS. Black, with a blue gloss; quill-feathers crimson; bill red, with a yellow front; back of the head purple. Royal cuckow.

Found in the interior parts of Africa.

BRASILENSES. Tail nearly equal; head crested; body red; quill-feathers yellowish. Linn. Le couroncoucou, Buff. Red crested cuckow. Lath.

Inhabits Brazil. Length ten inches; tail pale red; crest red, variegated with black; belly mixed with yellowish; quill-feathers and tail yellow, with a hind of black.


The length of this bird is fourteen inches. Its bill and legs black; irides orange; breast elaret; belly whitish, glosed with rufous; wings and tail beneath cinereous; exterior tail-feathers tipped with white. Inhabit Madagascar.

ÆGYPTIUS. Brown, beneath tawny-white; head, neck, and crested tail green; wings rufous. Gmel. Egyptian cuckow.

Inhabits India, and very much resembles the last.

SONNERATII.
Sonnerati. Banded with black; above rufous brown, beneath white; tail-feathers spotted with black. Cuculus Sonnerati, Gmel. Sonnerat's cuckoo.

Size of a blackbird. Bill, irides, and legs yellow. Inhabits India.

Hepticus. Tail cuneated; body undulated; with brown and black; ear tufts enormous; band, tips of the wings, and bands on the tail black, beneath white, waved with black; legs yellow. Cuculus hepticus, Gmel. Liver-colored cuckoo.

Length thirteen inches and a half. Tail-feathers rufous-brown, barred with black, tipped with white, and marked with a small white terminal spot. Native place unknown.

Flavus. Teteaceous, beneath yellowish; crown and chin pale grey; tail cuneated, black with white lines. Cuculus flavus, Gmel. Yellow-bellied cuckoo.

Eight inches in length. The bill and legs yellowish; irides yellow. Inhabits the island of Pinay.

Auratus. Tail cuneated; body above golden green, beneath white; five black bars on the head; wing-coverts, second quill and tail-feathers at the tip white. Cuculus auratus, Gmel. Gilded cuckoo.

Inhabits the Cape of Good Hope. The length of this bird is seven inches. Bill greenish-brown; legs grey.

Lucicntus. Above green, beneath white; each side a green-gold lunule; quail-feathers and tail brown. Cuculus lucidus, Gmel. Shining cuckoo.

A native of New Zealand. Length seven inches. Bill and legs blue; lower tail-coverts white.

Coronatus. Tail cuneated; body black, beneath white; collar white. Cuculus coronatus, Gmel. Collared cuckoo.

A native of the East Indies.

Paradiseus. Two external tail-feathers very long and distinctly at the tip; head crested; body green. Cuculus paradiseus, Gmel. Le coq à longues plumes, Buff. Paradise cuckoo.

Inhabits Siam. The length of this bird is seventeen inches.

The bill blackish; legs and claws grey.

CUCUMBER, in Botany. See Cucumber.

Cucumber, single-seeded. See Sicyos angustula.

Cucumber, small creeping. See Melothia pendula.

Cucumber, snake. See Trichosanthes anguina.

Cucumber, spitting, or asper. See Momordica claterium.

Cucumber, in Gardening, is a well-known tender plant of the exotic kind, much cultivated in hot-bed frames for the fruit. See Cucumber.


Erf. Cha. Calyx five-toothed. Corolla five-parted. Filaments in the same sets. Stigmas three. Seeds sharp-edged, without a border. In this genus are comprehended three of Tournefort's; cucumis, melo, and colocynthis, with part of his anoraria.

Sp. 1. C. colocynthis. Bitter cucumber, or colocynthis. Linn Sp. pl. 1. Mart. 1. Lam. 4. Willd. 1. Woody Med. Bot. vol. iii. pl. 175. Blackw. tab. 441. Salt. Hort. 1. tab. 10. (Colocynthis fructu rotundo major; Bauh. p. 313. Tourn. 1.7. Rai. hist. 4.5. C. amara cathartica; Lob. t. 154.) "Leaves multiform; pomes globular, smooth." Root annual. Stems slender, trailing, angular, ferruginous, and whitish, with short hairs, branched. Leaves petiolate, deep and obtusely fruticose, green above, whitish and undulated beneath. Flowers small, yellow, axillary, solitary. Fruit the size of an orange, globular, yellowish when ripe, with a thin coriaceous rind, containing a white fleshy intensely bitter pulp. A native of the Levant. The dried pulp separated from the rind is imported into this part of Europe from Aleppo, and is the colocynth of the Egyptians, the colchicums, and the alhambal of the Arabs. For its medical qualities, see COLOCYNTHIS. 2. C. prophetarum. Linn. Sp. pl. 2. Mart. 2. Lam. 4. Willd. 2. Jacq. Hort. tab. 9. Blackw. tab. 593. (Colocynthis pulmilia; Shaw. afr. 104.) "Leaves heart-shaped, five-lobed, finely toothed, obtuse; pomes globular, firm and mucilaginous." Root annual. Stems a foot and half long, trailing, slender, fringed, rough with short bristly hairs. Leaves petiolate, greenish, rough underneath, cloven half way down into three lobes, the two lateral ones more or less dentate, the middle one entire. Fruit variegated with alternate greenish and yellowish streaks, vying in bitterness with colocynthis. A native of Arabia. 3. C. afri- cium. Linn. jun. Supp. 453. Mart. 4. Lam. 10. Willd. 3. Herm. Par. 153. tab. 134. Rai. hist. 3. 354. "Leaves palmate-furnished, acute; stem angular; pomes oval, echinate." Stems numerous, slender, trailing. Leaves petiolate, quinquefid. Flowers yellow, small; males on filiform, somewhat villous peduncles. A native of the Cape of Good Hope. 4. C. anguria. Linn. Sp. Pl. 3. Mart. 1. Lam. 11. (Anguria americana, fructu echinato dulci; Tourn. 107. C. americana folio; Sloan. Jam. 103. Pfluk. tab. 170. fig. 5. C. subhifurcata minor; Brown. Jam. 353.) "Leaves palmate-furnished; pomes globular, echinate." Root annual. Stems four or five feet long, angular, hispid. Leaves petiolate, deeply fruticose, rough. Flowers yellow, axillary, small as those of bryony. Fruit large, ovate, acuminate; two long, thick, short and flat, the latter covering the former. A native of the West Indies, where the green fruit is eaten, but is far inferior to our common cucumber. It is also frequently used, with other herbs, in soups, and is esteemed an agreeable wholesome ingredient. 5. C. cutan-
CUCUMIS.

Muf. 229. tab. 17. fig. 2. Petola; Rumph. Amb. 3. 438. tab. 149. Pinc. Rhem. Mal. S. 15. tab. 7.) “Leaves rounded-angular; pomes with ten acute angles.” 5. Fruit shorter, somewhat top-shaped.” C. indica Rumph.; Pink. Alm. 122. tab. 172. fig. 1. Root annual. Stem climbing, slender, pentagonal, almost smooth. Leaves petioled, heart-shaped, sharply angular, serrate-toothed, green above, pale underneath, rough with very short hairs. Flowers yellowish, rather large; males in a terminal raceme, bracteate; females solitary. Flower six or eight inches long, keelled towards the peduncle, terminated by a pointed deciduous operculum, smooth, becoming dry and woody when ripe. A native of the East Indies, China, and Tartary. Its fruit, when half ripe and tender, is eaten either boiled or pickled, but is rather insipid. Loureo observes, that the operculum attributed to the fruit is not noticed by Rumphius, nor was it found in the plants examined by himself in Cochinchina and China. 6. C. es-


ly hairs. Flowers yellow, rather firm, axillary, solitary, on short peduncles; calyx covered with white hairs; corolla wrinkled, ribbed, with bristles on the ribs on the outside; germ nearly globular, covered with white hairs. The pitifulious flowers have been observed in England to have large, apparently fertile anthers, and to be therefore really hermaphrodites, but as they are accompanied by flowers which have stamens only, the pollen in their anthers is probably defective. This peculiarity has not been noticed by the French botanists. Fruit, as in most plants which have been long in a state of general cultivation, very various in its size, form, and other qualities; commonly roundish or oval, sometimes a little flattened at both ends; in some varieties the size of a man’s head; in others, of a moderate size; and in others, much smaller; the external surface of some even; of others, warted; of others, more or less nodose, and of others, marked with rounded, pro-
tuberant longitudinal ribs; the colour, either grey, yellow-

ish, or green; rind thickish and rather hard; flesh white, green, yellow or reddish, abundant, tender, succulent, of an agreeable tace, and pleasant flavour, sometimes a little resembling that of mulk; the inner pulp watery, appearing to confit of broken fibres sweet-tafted. Seeds numerous, commonly in a double row, flattish oval, covered with a tough skin similar to parchement, which contains a sweet oleaginous, fandonaceous kernel. The melon is generally esteemed one of the most delicious summer fruits, and when taken in moderate quantity is of easy digestion; but if taken to excess is apt to produce violent and sometimes dangerous disorders in the bowels and it is pe-

culiarly refreshing in hot climates, where it is of a superior quality, abounds more in facetious matter, and is far

delay to disagree. In Europe it is commonly eaten with

fruit, and if pepper or ginger be added, it is less likely to

produce any unpleasing consequences. In France it is

eaten as a sauce to boiled beef, and as Mr. Pinkerton af-

fers, is then perfectly harmless. The flesh is also preferred

for the same purpose in vinegar and sugar, which, seabe-

faced with cinnamon and cloves, makes a pleasant whole-

fome composition and will keep several years. The wild plant

from which these luxurious varieties have been derived is

unknown, but is said by Linnaeus to be a native of

Tartary. For a more particular account of the principal

varieties, and of the manner in which they are cultivated,

see the article Cucumis, in Gardening. 8. C. muricatus.

Wildl. 7. “Leaves heart-shaped, angular; angles rounded,

hoary underneath; pomes cylindrical, muricated.” Leaves

similar to those of the preceding, pubescent; younger ones

tomentous on both sides. Male flowers axillary, elipturate,

very short, pubescent; females foliate. A native of Trans-


Melo variegatus; Dill. Elth. 223. tab. 77. fig. 218. Melo pufiflorus. Pink. Alm. 145. “Angles of the leaves rounded; pomes cylindrical, with the navel retuse.” Root annual. Lower leaves roundish, upper somewhat angular; both slightly villous and toothed, green above, paler underneath. Flowers yellow, divided into five or six roundish segments, slightly crenate. Fruit the size and form of an orange; rind smooth, sometimes sparingly warty, slightly furrowed only at the top. Variegated with green and dark orange strakes, and with oblong unequal green spots, yellow when fully ripe, and at length whitish; with a whitish mucilaginous fugar, and a whitish inebriant pulp. A native of the Levant. 10. C. Chat. Linn. Sp. Pl. 7. Mart. 8. Lam. 4. Wildl. 10. (C. zygymus roundifolius; Bann. pin. 310. Tourn. 104. Chat.; Amy. Egypt. 114. tab. 116. V. (Egypt. 47.) “Hirifite; angles of the leaves rounded, toothed, pomes spinose-spherical, attenuated at both ends, rough with hairs.” Root annual. Whole plant villous, almost tomentous, whitish green, with the habit of the common melon, but decidedly distinguished by the form of the fruit. Stems procumbent, villous, obtusely pentagonal, zig-zag, branched. Leaves petioled. Flowers yellow, small, axillary. A native of Egypt, where it is much cultivated for the sake of the fruit, which is esteemed wholesome, and eaten both raw and cooked, but when railed in our climate, is very indifferent. A pleafant refreshing beverage is also obtained from it in the following manner. When the fruit is quite ripe, but not separated from the stem, a hole is made in its upper end, into which a stick is introduced, for the purpose of bruising the pulp; the hole is then closed up with wax, and the fruit, if fixed to the stem, is placed in a hole underneath, and cooked with it. At the end of a few days, the pulp becomes entirely diffused, and with the addition of a little sugar, is fit for use. 11. C. pubescent. Wildl. 11. “Leaves heart-shaped, somewhat angular, rather acute, sharply toothed, scabrous; pomes elliptical, obtuse, pubescent.” Root annual. Fruit three inches long, near one inch thick, ob-
ture at both ends; green when young, and marked with rather obscure narrow longitudinal strakes; afterwards en-
tirely white. 12. C. maculatus. Wildl. 12. “Leaves heart shaped, obliquely angular, roundish-obtuse, finely toothed, scabrous; pomes elliptical, narrow at the blade, smooth.” Root annual. Fruit somewhat similar to that of the preceding, but smooth, and narrowed at the blade, marked when young with broad green strakes; white when ripe,
ripened, and variegated with green spots. Native country unknown. 13. C. sativus. Common cucumber. Lind. Sp. Pl. 8. Mart. 9. Lam. 2. Willd. 13. Gartt. tab. 88. fig. 3. Saff. Hort. 1. tab. 62. Black. tab. 4. Lam. Ill. 795. Bauh. pin. 310. "Angles of the leaves right; pomes ovate-oblong, fructose. Root annual. Stems creeping, bifid, rough. Leaves larger, longer, and thicker than those of the melon, lefs rounded, with sharper and more projecting terminating angles. Flowers yellow, axillary; germ oblong, obtusely angular, not hairy, but muricated with prickles springing from a smooth warty substance. Fruit elongated, almost cylindrical, obtuse at both ends, fructose, with spines, yellow, white or green in different varieties; mid thin, coriaceous; flesh spongy; primary cells three or four, each divided into two secondary ones, and these again into the proper cells of the seeds, filled with a pulvullid jelly. Supposed to be a native of Tartary, cultivated in almost every part of the civilized world. For its most remarkable varieties and the mode of its cultivation, see the article Cucumis, in Gardening, 14. C. anguinus. Lind. Sp. Pl. 10. Mart. 10. Willd. 14. (Petola anguina; Rumpl. Amb. 5. 407. tab. 148.) "Leaves lobed; pomes cylindrical, very long, even-surfaced, twifled." Root annul. Flowers smaller than others of the genus, with a long tube. Fruit three feet long, or more, red when ripe, with a rank smell, and bitter taste. A native of the East Indies. According to La Marche it is only a variety of trichofanthes anguina. 15. C. flexuosus. Lind. Sp. Pl. 9. Mart. 11. Lam. 3. Willd. 15. Bauh. pin. 310. Tourn. 104. (C. oblongus; Dod. Pempt. 662. C. anguinus flexuosus; Lcb. Ic. 639.) "Leaves angular, somewhat lobed; pomes cylindrical, furrowed, curved." Root annul. Stems slender, creeping, villous. Leaves petioled. Flowers small, yellow, axillary. Fruit the size of a large pear, thicker at the upper end, smooth, even-surfaced, of a delicious flavour. A native of the East Indies; cultivated in Japan, where it is called by the Dutch banket melon.


Cucumis anguinus; Blackw. See Momordica elaterium.

Cucumis bryooides hirsutaca; Pluk. See Sicyos anguinas; see Sicyos anguinas.

Cucumis campestris monspurium; Herm. sylvestris; Lind. See Brevonia monspurium.

Cucumis medspurium; Lind. See Brevonia medspurium.

Cucumis minia frutica ovata; Sloan. See Melothria minia frutica ovata; Pluk.

Cucumis parva retusa; Boscq. See Melothria parva retusa; Boscq.

Cucumis punicus; Cam. See Momordica punicus; Cam.

Cucumis punicus; Cam. See Momordica punicus; Cam.

Cucumis trifolius; Plum. See Anguria trifolata.

Cucumis, in Gardening, comprehends plants of the tender trailing annual kind, of which the species mostly cultivated are the common cucumber, (C. sativus) and the common or milk melon, (C. melo).

In the first of these species the roots are constricted of many long slender white fibres, the stems being likewise long, rather tender, and very branchy at their extremities, either trailing on the surface of the ground, or climbing by means of clasps; the leaves are large and angular, on long erect footstems, with much bristles or hairs. The flowers have the segments of the calyx much longer, and the corolla of a deeper yellow colour, than in the melon. They are male and female on the same plant, in the same or different fruits, the latter being succeeded by oblong rough fruit.

In the second species the roots are composed of a great number of very stout, wide spreading fibres, the stems being procumbent or trailing to a considerable length, very much branched, and furnished with tendrils for climbing; the leaves are palmate-nerved, or entire, slightly toothed, having rounded corners and rough with brittle; the flowers are pale yellow in colour, lateral and solitary, those which are termed female having four large anthers, with the germ pubescent, and covered with white hairs.

It has been suggested by Martyn, that the discovery of what are usually termed female flowers, being real hermaphrodites with fertile anthers, renders it less necessary to convey them to the males, as practised by some, than is commonly supposed.

The fruit is of a roundish or oval form, blunt, usually furrowed longitudinally, occasionally netted, and caruncled, being from four to twelve inches in length and diameter, of a yellowish green, or white colour, and having a firm pulp, juicy, reddish, seldom green. It is said to have been first introduced into Europe from Persia.

Of the first of these species, or the cucumber, the principal varieties are, the common rough green prickly, which is fix or seven inches long, with a dark-green skin, closely set with small prickles, and which is hardy, a plentiful bearer, but not fruit early. The short green prickly, which is three or four inches long, with a rather smooth skin, but having small black prickles; it is one of the hardiest and earliest sorts. The long green prickly, which is from fix to eight or nine inches long, thinly set with prickles, and a good bearer; there is a sub-variety also with white fruit. The early green cucumber, which is shortish, early, with the flowers in clusters. The long smooth green cucumber, with large flakes and leaves, and the fruit generally from ten to fifteen inches long, with a smooth skin without prickles. The long smooth cucumber, which is lees watery, and of a better quality. The large smooth green Roman, with long large fruit, quite smooth. The long white prickly Dutch, with fruit eight or ten inches long, white, with small black prickles, which is a bad bearer, less hardy, but the fruit not so watery, and with fewer seeds.

And of the second or melon, there are also numerous varieties, but those most deserving of cultivation are, the Cantaloup, so called from a place near Rome, where it has been long cultivated. Its flesh, when in perfection, is delicious, and may be eaten with safety. The outer coat is very rough, and full of knobs and protuberances like warts; it is of a middling size, rather round than long, and the flesh, for the most part, of an orange colour. There are several sub-varieties, such as the large black caruncled, or black-rake, which is of a blackish green-colour; the large green caruncled, the large white caruncled, and the orange. The Roman, which is forwarder in the season than the above. The fascodel, which adds a good fort when cultivated for early fruit, but inferior to the cantaloup. The sativa is likewise a good fort, but very small, seldom bigger than a large orange; it is a little flatted at the two ends, and the outer coat is warded than the small cantaloup. The small Portugali, sometimes termed the durante melon, is a pretty good fruit, the plants generally producing them in plenty. It may be cultivated for an early crop. And the black Gallaway, introduced from Portugal by lord Galloway, is likewise a good fort for early cultivation, as the fruit ripens in a very short time from its first setting. There are likewise some other varieties which may be cultivated.

Method of Culture.—In the raising and producing of these different fruits, much care and attention are necessary, as well as a considerable degree of skill in the regulation, management, and application of the heat which is required to bring them to maturity in the best and most perfect manner.
CUCUMIS.

Mode of Culture in the Cucumber House.—The common method of raising these plants is by sowing the seeds annually in hot-beds covered by frames and glasshouses, for the early production of fruit, and in the open ground for the late crops. The former mode, however, in general, be that which is practiced in some degree or other, till the frame becomes perfectly warm and settled, as towards the latter end of May or beginning of June. Various are the methods of applying heat in the producing of this fruit, at early and late periods, which have been employed and recommended; but those which seem to have had the greatest success are dung hot-beds, bark hot-beds, steam-panes, and fluid pits. It is sufficiently obvious that, in whatever manner artificial heat is made use of in this intention, the greatest point to be attended to is, that of communicating and continuing it in as regular and equal a way as possible. But there is another circumstance which equally deserves consideration in the buffalo; which is, that of its being accompanied with a suitable degree of moisture. It is conceived to be principally on this account that flable-dung answers more completely in raising of this form of fruit than tanner's bark, or the use of fixed pits, which have been more lately had recourse to for the purpose. The author of the Forcing Gardener has remarked that the deficiency of the gentle heat is the reason why bark hot beds are less useful for raising the early crops, but highly servicable in the late ones, as they have the effect of drying off the external damp which are then prevalent, and of course hastening the maturity of the fruit. In other cases the plants “are impatient in a dry fire heat.”

The most material, and, indeed, chief objections to the employing of the steam of boiling water in the forcing of cucumbers, are the great difficulty of keeping the heat up in a regular manner, and the vast trouble that attends the use of it.

The great and principal inconveniences that have been met with in the forcing of this fruit on dung hot-beds, are the danger of injuring the plants by too much heat, and that of their being blanched by the rank flax that mostly abounds. In order, therefore, to obviate these inconveniences, it has been attempted to raise these fruits on the beds of the preceding year by means of linings of fresh dung; but in practice it has not only been found that such beds are equally liable to dampness; but at the same time exposed to much risk and inconvenience from the frequent loss of heat in the linings, which are made use of for the purpose.

On these different accounts it is therefore conceived probable that, until some more convenient mode of applying and keeping up a regular moist heat be discovered, than has hitherto been made use of, the practice of procuring this sort of fruit on fresh made dung hot-beds, must be had recourse to as the best and most certain method for the early crops in all cases.

In the raising and cultivating of the cucumber in this way, the apparatus and materials which are principally necessary in carrying it to any considerable extent, are a sufficient number of frames or pits of different sizes, with glass slats for covering them, to as to prevent the entrance of water and air. And it is usual, where this culture is much attended to, and practiced in the most perfect manner, to have a one-light frame for the feed-bed; a two-light one for prick ing out the young plants; and two or more two-light frames for their fruiting in: but they must be cultivated very well, on a small scale, with one or two small frames, or proper pits. See Forcing Frame and Frame.

In order to the constructing of the hot-beds, the principal material is that of fresh horse-dung in neither too long or too short a condition, but such as is proper for taking on the process of fermentation. It should be had in the proportion of about one cart-load to each light, and be prepared for the purpose by being well shaken together into a heap, ten days or a fortnight before it is made use of; as by this means a regular heat will be brought on, and the rank heat and flax as well as the disagreeable smell be removed. Some gardeners, in order to promote these intentions, and render the preparation more perfect, have the whole turned over once or twice. Care, however, should be taken, that the reduction of the dung be not carried too far before it is put on the bed; as, that where that is the case, too little heat will afterwards be produced, and there will be want of regularity in its being supplied.

In cases where this fort of material is scarce, and there is bark at hand, beds for the purpose may be made with it, having only dung for the outside; but care must be taken, that they be so covered as that the roots of the plants never reach the bark, as it enders and destroys them in a very short time, by which much loss and disappointment must be sustained.

In respect to the manner of making beds for this fort of culture, for gardeners, where proper forcing grounds are not provided, with a view of means, sink the foundations of them; but this should never be practised, except where the soil is very dry and gravelly, as the scarification of moisture is very prejudicial in the bottoms of such beds. If the soil be of a moist retentive nature, it will indeed be highly beneficial to have the bottoms raised to some height above the surface of the natural ground. Besides, where they are not sunk, the heat from the linings is more beneficially applied, and, at the same time, with greater facility and convenience.

In all cases where proper forcing grounds are not made use of for the culture of these plants, open, dry warm, sheltered situations, which decline to or have southern aspects, should be chosen for the purpose.

The earthy material, or mould for covering the beds with, should be of a light, good, rich quality, prepared by being thrown into a heap for several months before it is employed. The author of the Scotch Forcing Gardener advises three-fourths of the richest black loam that can be procured from a pattler, and one-fourth of vegetable mould from decayed tree-leaves, mixed and incorporated well with a due proportion of good flable dung, as the ballot for this purpose. The rotten dung of old hot beds is, however, most commonly employed with such earthy substan ces as those just mentioned.

But the mould made use of for the more early crops should be laid up in some open place, where it may be kept in a rather dry condition, to render it more fit for the purpose, when it may be wanted.

And when it is to be made use of, it should not be rendered fine by sifting; as when made too fine, it is apt to be too close and compact, and by that means not only to prevent the roots of the plants from perfectly establishing themselves, but censure the heat too much, and endanger the plants in that way in a considerable degree.

In addition to these, some small pots will be wanted, where this fort of culture is attempted at an early period, both for the purpose of fowing the seed in, and of prick ing the young plants out into, that they may be removed and transplanted with greater ease, certainty, and convenience, and with less danger of being injured in their growth. It is usual for each pot to contain two or three plants, which are generally sufficient for a one-light frame.
Cucumis.

Pots of the sizes denominated thirty-two and forty-eight are commonly made use of in this intention.

In addition to these requisites, bafes mats are necessary to cover the glasses in the nights with, and when the weather is cold and bad. Straw, and other similar substances, may be employed for the same use; but they are much less convenient than mats. The periods of sowing and beginning the works of forcing, in order to have this fruit of in the easy season, must vary according as it is wanted; but for the very early crops, as those to be cut in the end of December, and the following month, and in February, March, and April, it should, for the former, be done towards the end of October and beginning of the following month; and for the latter, in December, January, and the beginning of February. But for later crops, such as those to come in in June and the following month, it should be in April and May; and still later crops are often produced on ridges, in the open ground, without artificial heat being employed.

The common and general practice is, however, chiefly to have only three crops: the first in March or April, on hot beds under glasses; the second in May, June, and July, under hand-glasses; and the last on ridges, as just mentioned.

But in order to have the crops come in regularly, an exact attention should be paid to the periods of putting in the seed, and beginning the work of forcing; as without this there must be great uncertainty.

In respect to the choice of seed for the different crops, the early short and long prickly fruits are mostly made use of for the first or early crops; but the latter for the general ones, and those of the other larger kinds for the later crops. The seed should be taken from the earliest fruit, and at the frill or second joints, and be perfectly well ripened. And, in order to prevent its running too luxuriantly into vine, it should be kept two years or more before it is made use of; or, when employed while fresh, be kept some weeks or months in a dry, warm situation, as by this means the plants fruit better, from their growth being in some measure restricted.

Method of forming the Beds and raising the Plants.—In the early and more forward culture of this vegetable, it is mostly the practice, where there are sufficient conveniences, and plenty of dung or other materials, to have recourse, as has been suggested above, to two or more hot-beds under frames; as a small one for sowing the seeds upon, and a large one for growing the plants upon; or, sometimes the second is made of a more moderate size, and used for nursing the plants in, previous to their being set or ridged out in the large one, for the purpose of producing fruit. However, by making the beds of a good size, and in a substantial manner, with due attention to livings, they may be grown very well on one or two hot-beds. When cultivated on a small scale, seldom more than one is indeed employed in the raising of this fruit of fruit.

In regard to forming the beds, attention must be paid to the size of the frames, and to making them considerably larger than the boxes. Some gardeners advise only a few inches; but Mr. Nicol thinks they should extend beyond the frames, at least eighteen inches all round the frame.

In the bottom of building the beds, the dung, prepared as mentioned above, should be used in the following manner, beginning with the moist livery part, and afterwards using that which is more reduced. The different parts should be well intermixed and mixed together, and by means with the fork, or trodden equally in, where very livery, once or twice as the work proceeds, till they are made up to the full height of five feet in the back, and four in the front of the frame. Some gardeners suppose two feet and a half, or three feet, to be sufficient, when the beds are merely intended for jull raising the plants; but the former practice is probably always the best, where plenty of materials can be easily procured. When thus prepared, it is the custom of some to let them remain with the frames and glasses upon them for a few days, that the rank heat may be brought up; and when it begins to go off, to cover them with mould, prepared in the manner already described, to the depth of five or six inches, sowing the seed in little drills half an inch deep, when the mould is a little warmed. Others cover them almost immediately with dry earth, tan, or other similar material, to the depth of five or six inches, sowing the seeds in small pots filled with mould, plunging them previously for a little time in the beds; cautiously guarding against too much heat at first, by drawing up the pots when necessary.

The author of the Scotch Forcing Gardener, however, directs that when the beds have been made to the height mentioned above, they should be trenched over in a careful manner, as in forcing asparagus, and the frames then placed upon them; laying dry fine earth or pit-fand in a sloping direction, according to the frames, over the whole, to within six inches of the lights, and above that two inches in thickens of light sandy loam. The seeds should then be sown in small garden pots or pans, filled with entire vegetable mould from decayed tree-leaves, and covered to the depth of half an inch; plunging them to the brims in the centres of the beds, and a foot from the backs. The glasses should then be placed over them in the common manner; when, in the course of twenty-four hours, the beds will in general take on heat, when a little air should be constantly admitted, by lifting the backs of the lights an inch or more in height, and the fronts about half that height, except when there is frost, in order to dischage any rank heat or vapour that may be produced in such circumstances.

It is necessary that the frames should be carefully matted up every night, when the sun begins to decline, and be uncovered before eight o'clock in the morning, when the glass will permit; as perfect a guard should be had to this as of air and water. And Mr. Nicol says, that "a little kindly steam in the morning is a good symptom, but it ought never to be encouraged to any great extent." He never wishes to see more steam in the beds at this time of the day, than what is entirely dispersed in the fifth hour after the frames are uncovered and exposed.

It is proper that the bottoms of the pots or pans should be occasionally continued to be examined, to see that the heat is not too violent; raising and watering them, with water brought to a proper temperature, in the beds when necessary. And as soon as the plants have attained about two inches growth, they should be pricked out into other small pots, filled with the same sort of mould, three or four in each, putting them as far distant from each other as possible, the mould being lettered to their roots by a little water; re-plunging them in the beds to their brims, the furriaces of which being previously wrought over to the full depth of the sandy covering, and another stratum of sandy loam applied as before. They should be carefully matted in these situations, by due attention to the admission of air, the giving of water, and the regulation of steam; continuing occasionally the examination of the bottoms of the pots, to guard against too much heat being applied to the roots of the plants.

And while the plants are thus carefully brought forward to the proper stage for being set or ridged out in the fruiting hot-beds, which is the case when they have acquired a vigorous growth.
gorious growth, and put forth three or four rough leaves, some stunted dung, in proportion to the extent of the frames, should be got ready in the manner directed above for forming the fruiting beds, which should be made up in the same way as the former. The frames and lights should then be placed over the beds, in order to bring up the heat, and protect them from being injured by wet: and when the heat has become moderate, which will require time in proportion to the extent of the framing, the beds should be covered or moulded over, the surfaces of them being previously rendered even. In performing thisbuffets, the earth should be applied in such a manner as to form a sort of hilllock in the middle of each hill, within about a foot or eighteen inches from the backs of the frames; the whole of the other parts being covered equally to the depth of two, three, or more inches. The author of the Scott Forcing Gardener, however, directs, that when the dung is suspected of heating to too great a degree, the beds should be turfed all over, as mentioned above: but where this is not the case, a large round turf placed in the middle of each light, exactly under the parts where the plants are to be placed, may be sufficient; the surface of the dung, in this case, being previously covered over to the depth of six inches with light sand, or well rotted old man, which should be first made perfectly dry. The turf is, however, rejected by many as wholly unnecessary.

But while necessity is made use of, the beds will in general be in a proper state for putting the plants in in about twenty-four hours; but before this is done, the mould or earth should be drawn up, so as to raise the hilllocks to within five or six inches of the glasses, exactly over the turfs, where they are used, leaving them ten inches or a foot in breadth at the tops or upper parts.

In the operation of planting or ridging out the plants, a hole should be formed in each hilllock, sufficiently large for the complete reception of the plants, with the entire balls of earth about their roots, up to the level of the surfaces of the hills, covering them over with a little mould; the whole being then settled with a little water, previously brought to the proper state of warmth, and the glasses put on. It is the practice with some, in order to promote the adhesion of the mould about the roots of the plants, to have recourse to watering the pots before they are turned out of them.

When the plants have been thus set out, they should be carefully attended to in respect of air, water, covering in the night and bad weather, the state of heat of the beds, the occasional moulding of the spaces between the hills, and the clipping and training of the plants; in all which much care is requisite.

In regard to regulating the first, the state of the season and the beds should be fully considered; and air admitted accordingly, by raising the back part of the lights. The waterings should be cautiously given in the winter and early spring, but more freely as the warmth of the weather advances; being done in the frame for some time after each application. In the more early crops, much less water will be necessary than in those in which the season is more advanced; and the former will also be of need of much less frequent waterings over heat than those of the latter. In their latter, twice is his wife occasionally in a fury, when the weather is sunny. The fences should be carefully covered up with mats every evening. Before the influence of the sun is wholly gone, and which the weather is very fine, more thun is needed more of this is found necessary. The lights should be removed the third thing in the morning, or as soon as the sun upon the frames, when the state of the weather will permit; but in very severe weather, not removed at all, or but a very little in the middle of the day.

And the heat of the beds is likewise to be particularly regarded at first, by a frequent examination of the trying-flicks; and regulated in such a manner as to promote the healthy growth of the plants. When it continues too great, it should be let off, by making holes in the sides of the beds, and the use of fresh earth on the surfaces.

But when the heat of the beds begins evidently to decline, recourse must immediately be had to the application of linings of fresh dung round them, so as to keep up a due degree of heat; care being constantly taken to repeat them as frequently as may be necessary, and, at the same time to guard against the prejudicial effects of too great heat.

And these linings Mr. Nicol advises to be covered by turf or mould, and to have the sides and ends of the beds cut off, and formed with them.

But the buffets of earthing the beds between the hilllocks should be gradually performed, as soon as the heat is become perfectly moderate; the mould for the purpose being previously laid in some part of the frame. Mr. Nicol considers fifteen inches as a good medium for the earth above the sand or tan, and thinks the buffets should be done either a few days before or after the application of the linings.

And the buffets of pruning or clipping is by some begun while the plants are in the nursery-beds; but others defer it till after the plants are ridged out in the fruiting-beds.

The author just noticed does not think it at all material to pick out the heart-buds, as soon as the plants have formed their rough leaves; as, from the most accurate trials, and the most minute observation, he is convinced "it is of no manner of consequence whether the buds are picked out or not." He "seldom thinks of picking or pinchung, till the plants begin to put forth runners or vices; nor even then, unless they happen to put forth too few to furnish the sides of the frames, till he prefers the rudiments of the fruit."

But it is then, he supposes, time to stop those vines which have fruit shown; but the others may be suffered to run to the length of six or eight joints, and be then stopped, to cause them to put out fertile ones, which they seldom fail to do, when the plants are in a healthy state of growth.

In cases in which an extraordinary quantity of male blossoms appears, it is recommended that part of them be rubbed off in a gentle manner with the finger and thumb; as the knife should never be made use of, unless in cutting out old vines. But this should never be attempted where there is not a very full blow, as it is proper to allow nature without either pruning or throttling her. And when the female blossoms are in a state of sufficient forwardness, they may be carefully impregnated with the strongest and most healthy of the males, by which the swelling of the fruit may be greatly promoted; for though the fruit may be formed, it is to a tolerable size, and be fit for the table without, it will not ripen its seed. And though the parina of the male blossoms may often be depilated on the remarks by means of the wood and infects, it is the female male, in the early culture of the plants, to have it performed by the hand, as handsome fruit may be got apart for seed with more certainty. In the execution of this work, there are some sometimes perform the work properly performed the day or day after the flowers of both sorts are fully open, the best way is to gather the male blossoms with a short stem, removing the petal or corolla carefully from about the filaments and anthers, and then take the filaments of the blossoms between the finger and thumb, and apply
CUCUMBS.

apply the top of the flaminia to the centre of the three flig-
mas of the female blossoms, and, by giving it a slight twist,
clutch a portion of the flamina into the flig mata of the fe-
male making use of a fresh male blossom for each impreg-
nation.

As soon as this has been performed, the plants begin to
grow vigorously, and produce large quantities of fruit.
Great care should therefore be taken to keep the vines in
circle order, and not too thick or crossing one another; all
the withered and decayed leaves being removed, as well as
the others, when too numerous or too irregularly placed.

And air should now be admitted more freely; increasing
the proportion daily, as the season advances. More large
and repeated waterings should likewise be given from the
cole of the pot; and the advantage of warm showers may be
taken, as the weather becomes more warm. Few plants re-
quire more of this fluid than these, at this period of their
growth. When the feaon becomes due in May, the glafts
may be wholly removed during the day-time. About the
middle of the following month, a lining, when necessary,
may be applied to the fronts of the frames, in the same way
as is done for the other plants, which will continue a due
degree of heat, as long as it will be requisite to attend to
the state of the bston heat in the beds.

It may be observed, that in the early culture of the cu-
cumber, it is a good practice never to depend for raising
the plants upon the first foliage; but to continue fowing occa-
ionally, both in the nursery and fruiting hot-beds, in pots,
managing the plants in the same way as those in the head-
beds; as by this means plants of different growths will be
constantly at hand, for the supplying of accidents, as well
for succession crops or other purposes.

Method of Culture under hand or other Glafs.—In this
method of cultivating the cucumber, the feed should be
fown towards the latter end of March, or beginning of the
following month, on an old hot-bed; having the plants in
a proper state for being set or ridged out about the beginning
of May, which is in general sufficiently early for their suc-
ceeding well in this mode of culture. The most proper for
feed for this purpose is that of the long prickly green cu-
cumber.

The beds for this purpose should be prepared of hot
dung, somewhat in the manner directed for the early crops;
being made from two to three feet in thickneas, and about
three in width, along the ground in a slanting line, having
the distance of from three to four feet each from other.
The most usual method is to form them in long trecheus, or
in holes of a foot and half in depth; but they may be made
on the level surface, where this mode is attempted at an
early period. In either method the bds. should be directly
earthed over, raising the mould into little bilocks for the
reception of the plants, the hard-glafs being immediately
placed over them; and in the course of a day or two, the
earth will be in a suitable condition for receiving the plants.
These should be put in, in the middle of the hills, three or
four in each, with hills of earth about their roots, in the
same manner as practised in the other crops; a little water
being given at the time, and the glafs put on, proper shade
being had recourse to when necessary, from the great heat of
the sun.
Belides, air and water should be afforded in due propor-
tion, according to the state of the weather and the heat of
the beds; keeping the glafs covered well with mats in the
nights, and when the fation is severe.

As soon as the heat in these beds begins to decline, more
earth should be applied between the hills of plants, and some
fresh dung externally, by way of linings, to preserve and
keep up the due degree of heat as much as possible, when
the weather continues cold. And as the warmth of the feaon advances, air and water should be given more freely,
as there may be occasion.

And from as the glafs have become pretty full with the
plants, they should be raised a little, that the runners may
extend themselves without, and be properly trained and
pegged down; continuing to attend them carefully in re-
spect to covering in the nights, and admitting air and water,
the last being frequently applied all over the beds in these
cakes.

By this mode of culture, cucumbers may be provided
from about the latter end of May till the beginning of Sep-
tember, and sometimes a little longer.

Method of Culture on Ridges in the open Ground.—In this
method of raising cucumbers, a warm sheltered situation,
which is open to the south, and where the loin is dry, good,
and rich, should be fixed upon; the land being well dug into
a trench, and a suitable proportion of rotten dung covered
in; the surface being formed into a foot of stone or bank,
flopping towards the south. Some gardener however, do
not dig in the ridges, which are formed in the same manner,
or fix feet in width, with a layer of a foot or a foot and a half
between them, which is a neat and good method.

In either method of management, the feed should be put
in as soon as the beds are ready; in the former, towards the
back parts, and in the latter, along the middle, to the
depth of about half an inch, fix or fewe seeds in a place, an
inch or two apart; light sprinklings of water being occasion-
ally given afterwards, till the plants begin to ap-
pear.

The most suitable and proper feason for performing these
rowings is about the end of May, or first part of June,
according to the state of the weather, and other cir-
cumstances.

The principal management: and culture which is necessary,
during the growth of these crops, is that of keeping the
crops perfectly free from all sorts of weeds, thinning the
plants out to proper distances, directing the runners in a
regular manner along the surface, and keeping them pro-
perly watered, according to the state of the weather, and other
circumstances.

These kinds of crops chiefly come in about the middle of
August, and are principally employed as picklers; for which
purpose the beds should be carefully looked over two or
three times every week, on dry days, and all inch cell ed
as are in a proper state, as about one or two inches in length,
and the thickness of the finger.
Whenever the weather proves wet, they should be guarded
as much as possible from the moulds, as under such cir-
cumstances they are very apt to become infected, and to have
a bad appearance.

In the bushels of living cucumbers, feed, some of the best
and milk ear cucumbers of the general frame crops should
be reserved till perfectly ripe, when they must be for-
parated from the pulp, and reduced more perfectly dry, when
they may be put up for use. For which they are, as has been seen, in the most proper condi-
tion, after they have been kept two or three years, and are in a perfectly dry condition.

The chief and most prejudicial effect that infests crops of
this feaon is the aphis, which is driven to present by the
carving up of the leaves, and is readily destroyed by fumi-
gating with tobacco, or in the manner which has been ad-
viced for the peach. See AMYGDALUS

Method of Culture in the Make kind.—In the bushels of
Y 2

raising
raising this fruit of fruit, the same kind of contrivances and apparatus is necessary as in the culture of the cucumber; but it is better if the frames or pits have rather more depth, and are somewhat larger in their other dimensions. But in the view of having melons ripe at an early period, as in May or the following month, brick pits without any crop of flowers through them, have been found in practice highly useful by Mr. M'Phail. The pit in each frame being about three feet six inches in width, ten feet in length, and three feet deep below the surface of the flowers. In the construction of these pits, it is considered the best and cheapest method to carry up brick walls four inches in thickness, to a proportionate height above the flowers, securing them at the top with a proper light frame of wood for the lights to rest upon.

Some advise that the beds (for the early crops especially) should be prepared in the same manner, and with materials of the same kind as for the cucumber; but that the later ones may be produced in hot-beds formed of tanners' bark, either wholly or in great part.

In the brick pits, the author of the "Gardener's Remembrancer" makes use of well fermented dung in sift filling of them, being so worked as that the noxious particles may have passed off by evaporation. Upon the surface of this well prepared dung, about a foot in depth of good rich earth is deposited. That which is of a loamy pliable quality is considered the best. Such as is procured from the surface of a common which has been long subject to the pasturage of sheep, after being laid in a heap until it becomes rotten, and then well broken down and pulverized, is likewise well suited for this purpose. But mould from a good quarter of the kitchen garden will answer.

When these sorts of pits are employed, it is suggested that the dung in the pits may continue several years, and that it is not necessary for the earthy material which is intended for the plants to grow in, to be renewed every season, as it will be sufficient to add each year, by incorporating it with the surface mould, about a foot in depth of some rich good earth, with a proper quantity of well rotted dung or vegetable mould.

For the ripening of this fruit at a late period, as in July and the two following months, the same practical writer has recourse to beds made of dung, from two to three feet in height; that which has been previously employed for linings in early forcing, being made use of, as being best suited to the purpose in consequence of its not being liable to heat violently, and from its noxious vapours having been discharged.

It is likewise stated, that the leaves of trees, where they can be provided in sufficient quantity, are very proper for forcing beds of this sort, provided dung is provided for making linings round them.

When pits are made use of for early forcing, the flowers which surround the bed of earth in each frame are kept clear of earth to admit the heat to pass freely from them to warm the air in the frames, till the weather becomes suitably fine, and with dung beds a similar space is left unfilled up next the inside of the box frames, close to the linings, for the same purpose, being closed with earth when the seafon becomes fine.

Mr. M'Phail further states, that such beds of dung, or of the leaves of trees as are formed in the winter seafon for forcing alparagus or lettuce, and in the spring for bringing forward at a more early period, than by the natural climate; plants of the cauliflower and lettuce kinds from seeds will be suitable for planting melons upon, at the latter end of May or beginning of the following month; as by these, and the abundance of linings of hot dung, heat enough is produced at this season, to bring melons of the best quality to a state of maturity. It is further stated, that of whatever sorts of materials the beds for this purpose be formed, the air which is afforded by them should be perfectly sweet, which in practice is readily known by the smell, but which is sometimes difficult to produce, as when the materials of which the beds are formed are too moist, they become sour by stagnation, and till that be removed, which often requires time, the plants will not have a proper growth; but besides this, such foul air has the tendency of producing various prejudicial infects.

The same writer conceives, that in covering beds of these kinds, eight or ten inches in depth of earth or mould, are quite sufficient for the roots of the plants to run in, as their roots do not naturally run deep, but spread out horizontally near the surface, especially by the forcing heat of the beds.

But Mr. Nicol thinks that these beds in the early culture should be torched all over in a rather stronger manner than in those of the cucumber, and be covered with a compost consisting of one half of strong brown loam, a quarter light black loam, an eighth vegetable mould, and the same quantity of stable dung.

The most proper season for sowing the seed for the very early crops, is about the middle of January; but the beginning of February is probably a better period: and sowings should be made twice in March for succession crops. These different sowings should be made on hot-beds, or in pots of light mould plunged in hot-beds prepared for the purpose, as in the cucumber; or the pots may be placed in luch old hot-beds of that sort as are at work, the same care and management being employed in the raising and nursing of the plants as in those of the cucumber kind. Mr. M'Phail, however, either sows them in the bed of earth where they are to remain and fruit without being transplanted, or in pots in a hot-bed to be afterwards transplanted, when the rudiment of the first rough leaf begins to appear, into smaller sized pots to the number of two or three plants in each; being, when they have made two or three rough leaves planted out, where they are to produce fruit, about a foot from the glass, and the earth well pressed round the ball.

As soon as the plants have attained five or six weeks growth, or have two or three rough leaves, and are beginning to send forth runners, they are in general in a proper state for being planted or ridged out in the fruiting beds, which should be prepared in the above manner, or as in those for cucumber plants: and after being well moulded over, the pots of plants put in with the full balls of earth about their roots exactly in the same way as was practised for cucumbers, immediately placing the glazed over them. Where the seeds are sweet, Mr. M'Phail advises that the lights should be kept shut down near fly close from the time they are planted out till they have made good roots which is shown by the shoots, in order to raise as great a heat as a warm lining and the fun could afford, carefully covering in the nights when necessary, as is sometimes the case in May and June.

After this, the plants should have air admitted pretty freely, and be kept in a moderate state of moisture till they begin to show fruit, great care being taken that the heat is not too great, and to keep the beds as free from fleas as possible; but from that period until the fruit is fully set, and has begun to swell, the waterings should be very sparing, especially when the seafon is moist and rainy.

As the heat in the beds begins to decline, it should be replaced by the application of linings, in the same manner.
CUCUMIS.

as practised for cucumbers; and the spaces between the hills of plants must be gradually filled up with mould nearly the fame height.

And as the runners proceed in their growth, they should be trained in a regular manner; and when they have three joints length they must be stopped. Some, however, drop them before, when they first begin to put forth runners. By these stoppings, the vines are induced to throw out lateral runners which afford fruit. Mr. Nicol directs, that the vines that have fruit on them should be shortened at the second joint above it; and that such as have none should be trained regularly to the length of seven or eight joints, and then stopped, to induce them to put forth new vines, which mostly show fruit at the second or third joint. It is of much importance in the state of the plants to keep up a due degree of heat, as they not only let the fruit much better and more plentifully where it is the case, but continue their growth in a more perfect manner. The young fruit mostly shows itself with numerous male blossoms; these should not be picked off as it sometimes the practice, as their farina is necessary for fertilizing the female flowers, which in the early crops may be performed in the manner directed for the cucumber. While the fruit is setting, air should always be pretty freely admitted when the weather is suitable.

And when the fruit is perfectly set, water should be given in larger proportions till it has done swelling and begins to become ripe, when it should be very sparingly employed; as where given in too great abundance, the flower of the fruit is not only much impaired, but it is often burst, and rendered less valuable by such means.

It is also necessary, that in proportion as the melons increase in size, pieces of flat or tile should be placed under each of them, as this not only prevents them being injured by the damp, but prevents their acquiring an earthy flavour. It is the practice with some to cover the whole surface with tiles, or some flavy or other similar substance, but this is not by any means judicious, as the flaty causes too much heat by the reflection that is produced, and the latter not only confines the moisture, but has a tendency to generate and harbour noxious insects of different kinds.

With regard to the management of the vines, as the fruit approaches to the state of maturity, they should not be suffered to retain too many leaves, nor these permitted to shade it from the influence of the sun. It is necessary to look over and examine them frequently, but never to prune them too greatly at one time, as where that is done, the plants are apt to sustain much injury by bleeding too much. Fresh air should be continued to be admitted freely whenever the state of the weather will allow of its being done with propriety.

This is a fruit of which generally becomes ripe in the course of six or seven weeks from the time of its setting, and should be cut as soon as ever it has obtained that state, as when delayed much of the fineness of flavour is lost. The signs of maturity are a fruit of cracking at the base about the stem, having a fine yellow colour, and affording a fine fragrant smell with a degree of softness about the top. It should be cut with a portion of the stem, and laid in a dry airy situation till wanted for use or sale.

It has been observed by the author of the "Scotch Forcing Gardening," that many of the early fowm kinds are capable of "producing a second crop, equal both in quantity and quality to the first." With this intention he advises, that after the first crop has been cut, the vines be shortened back to the left live joint on each; the beds being well watered, and protected from the effects of the midday sun for eight or ten days, at which time the plants will begin to put forth aphis, and show fruit in plenty.” We believe, however, that this practice is but seldom found to answer well.

Method of Culture under Hand or other Glasse. It is occasionally the practice with gardeners to raise melon crops on ridges under hand, or other sorts of glasses, especially when the season is late and insufficiently warm. The ridges in these cases must be formed with good prepared liable dung, in the same manner as practised in forming those for cucumbers; and also moulded or earthed into small hillocks in the same way, only rather more earth should be employed in the case of the melon. The plants may be raised in the feed or other beds, and be carefully nursed in a similar method. till they are in a proper state of growth to be set out, which in this sort of culture should not be done till towards the middle or latter end of May, according to the state of the feason, and the nature of the climate.

The plants should be turned out of the pots, and set or ridged out, one on each hillock, in the same way as those of the cucumber kind; shade and a slight watering being given at the time, and the glasses immediately put over them.

And after being thus planted out, the same care and management are necessary as in the other crops, in respect to air, water, covering in the nights, and bad weather, training and stopping the plants, as well as in moulding up the spaces between the hills, and the application of linings when required. As soon as the vines begin to fill the glasses, they should be trained on the outside of them, the glasses being raised upon blocks, but filled upon the plants protecting the vine on the outside as much as possible, and when the season is hot and rainy.

And the same directions are applicable after the setting of the fruit, until it becomes in a state proper for cutting, as in the frame crops or those in pits.

Method of Culture in filled Pits.—This is a method which, as has been already remarked, is principally made use of for raising late crops of this sort of fruit, but is capable of being made use of in the early crops likewise. It is practiced and recommended both by Mr. Nicol and Mr. M'Phail.

The plants for this purpose may be raised in hot-beds, or under hand or other glasses, until they are of a suitable growth to be planted in the pits, which is as described above.

It is sufficiently early, in general, to commence this sort of culture about the middle or latter end of June, as at this period but little bottom heat will be wanted; and the old beds that have produced other crops may be converted to this use. The Scotch Forcing Gardener directs that one-third new be mixed with the old tan or dung in order to renew the heat, levelling the whole to the bottom of the flues quite round. Turfing is considered by him as unnecessary, but mould should be applied to the thickness of about fifteen inches, so as to raise the whole surface to the height of the tops of the flues.

And when the beds are thus prepared, the plants should be put in, in a line along the middle of them in the pits, at the distance of about two feet from each other, care being taken to keep their roots as much as possible from reaching the tan or bark. See Bark pit.

In this way in their after-management, the plants require the same care according to the season, both in regard to air, water, training, stopping, and impregnating, as has been directed for the crops in the frames and other methods.

But towards the latter end of August or beginning of the following
following month, when the heat of the beds in the pits begins to be deficient, and there is much moisture and cold, it will most be requisite to have recourse to the aid of fire heat, in order to fully mature such fruit as is not already thoroughly ripened. The fires should, however, at first be few, and only made in the evening, but afterwards increased, as the severity of the season demands, so as that it may raise the heat of the air in the pits to about 70 degrees of Fahrenheit's thermometer, in the evenings and mornings, about eight o'clock. Mr. Nicol, indeed, directs, that in order to work efficiently, and keep up a proper degree of heat in dull heavy weather, a little fire should be made in the morning, and that as the growth of the plants is now over, water should be made use of with much caution, being wholly discontinued as soon as the fruit has attained its full growth and perfection.

In response to the need employed in the culture of this fruit of fruit, it should be as high as is taken from the bolt places of the most curious varieties, and which has been perfectly ripened, and preserved for one or more years in some dry place, as new seed seldom answers well in the cultivation of this fruit of fruit.

There are many insects which do great damage to these plants. The cucurbita, or red spider, is one that frequently does much injury to the melon, when the season is dry and there is a dry heat in the beds. Its attacks are long before it becomes visible, according to Mr. Forsyth, by the "leaves curving and cracking in the middle."

And as a remedy in this situation, he advises, when the weather is warm and sunny, the watering them all over the leaves from a watering-pot with the rope upon it, or an engine, about six o'clock in the morning, and about eight to make them with mats, when the sun shines, fluctuating the frames down close till towards eleven, then to admit air in a small proportion, continuing the mats till about three in the afternoon, and then removing them. In this way the leaves are prevented from injury by the sun while wet. And when there is a fourth or fourth-west wind, the waterings may be repeated about three in the afternoon, fluctuating up the frames to produce a strong exhalation, and destroy the insects. In the operation, as much water as possible should be thrown on the underside of the leaves, gently turning the vines for the purpose. The lights and sides of the boxes should likewise be well watered; and before the frames are made use of again they should be well washed inside and out, with water, and then soap-uds and urine in a state of mixture. Where melons have been infested with the spider the preceding season, none of the earth or mould should be made use of again, as it may do much injury.

In the business of sprinkling the leaves, water has been several days exposed to the sun, or made hot by woodashes, should be employed if possible.

But the author of the South Devon Gardener observes, that water at four periods cannot be thus applied without much injury to the plants, and that the leaves and vines are so brittle and tender, that they cannot be bruised or touched without harm being done. It is of course obvious, that much care and circumspection is necessary in exterminating these insects by the use of water. Mr. McPhail, after suggesting that the plants should "be duly attended to in giving them plenty of heat and water," adds that, "late in the spring, and in the summer months, they should be occasionally watered all over their leaves, till the earth in which the roots of the plants grow, be perfectly soaked, and then the frames shut down with a great heat in them." This he considers as only imitating and affording nature, as in his method, by means of pits, there is nothing to obstruct the superabundant water, as it oozes through the beds freely. He further suggests that "in hot dry weather the plants should be sprinkled frequently with clean water about four o'clock, and the lights shut down immediately for the night."

Cucumis sativus, in the Botanical Writings of the Arabians, a name given by Avicenna, and others, to the plant which produced the fruit called mel. This fruit was like the caper in shape, and had a hard shell over its kernel, like that of a hazel-nut. Such is the description they give of it, and of the mel and mel, two other fruits as like it in shape, and other respects, as in virtue.

CUCUMBA, an ancient form of Medicine; being a cup, or cover for the head, with opthalmic powders quitted in it; worn in many nervous distempers, and particularly such as more immediately affect the head; as against extirpations, deflexions, &c. It is now much out of use.

CUCURBIT; Cucurbita, in Chemistry, an earthen, or glass vessel, called also body; of the figure of a gourd, or a pear; wherein are put the matters to be distilled. It is sometimes made of tin, and sometimes of brass, tin. When a distillation is to be made, they fit on to a glass head with an aperture, and a neck proportional. Thus fitted, it is called an alembic; which see.


This genus includes four of Turnefort, cucurbitis, peps, melopepo, and anguria.

CUCURBITA.


This genus is very nearly allied to cucumis, being distinguished from it chiefly by the tuberous border of the seeds. its species, like those of cucumis, are annual with herbaceous stems, furnished with tendrils, and, according to circumstances, either procumbent or climbing. Like all other plants which have been long cultivated in different climates, it has branched out into innumerable varieties, which are the glory of the horticulturist; but generally prove a provoking stumbling block in the way of the systematic botanist, and often baffles his most laborious researches. Duchceine, a French naturalist, in a course of several years, made numerous experiments on the plants of this genus with a view to determine which are really distinct species and which are merely varieties. The result of his labours was a conviction that there are three original races which do not naturally propagate with each other, and from no two of which a cross breed can be artificially produced. La Mareck has adopted his general ideas, and has published them, with a few alterations, in the Encyclopedie Methodique. He is of opinion that there are four original species. As this arrangement had not appeared in our language, we shall lay it before our readers, though much abridged, to bring it within our proper limits, and still retain the French names when corresponding English ones do not occur.

1. The calabash, or white-flowered gourd. Cucurbita lanana; Duchceine. C. lanana; Linn. "Corollas widely spreading, somewhat oblata; seeds truncate-ellipsoidal at the tip." Lam. "Leaves almost round, pale green, flat, veiny, slightly villous and odoriferous, with two small conical glands beneath near the insertion of the petiole. Flowers white, almost wheel-shaped. Fruit, at first, pale green; when fully ripe, dull yellow, varying greatly in form and size; hard spongy, very white. Used with a border not entirely surrounding it, but forming a kind of appendage at its sides, giving it a square, not an oval form. The varieties of this original species may be reduced to three principal families. 1. The congodr, or proper botle gourd. C. lanana; J. Bauh. 2. 241. Tourn. 107. C. lanana; florido, folio molli; Bauh. Pin. 313. Morav. Hist. 1. 22. § 1. tab. 5. fig. 1. C. prior; Dod. Pempt. 648. This variety is distinguished by the form of the fruit, having, next the peduncle, a long tail, like the neck of a bottle, which, in one sub-varietv, is swollen near the bottom, and joined, by a contraction, to the upper part of the fruit. 2. The proper gourd. C. latior, folio molli, florido; J. Bauh. 2. 241. C. majori foliosis, folio albo; Bauh. Pin. 312. C. latior; Dod. Pempt. 669. Morav. § 1. tab. 5. fig. 2. Fruit large, tumid, with a hard shell. The young negroes fix one of the chile fruits under each of their arms, to afflict them in supporting themselves, when they are learning to swim. It is from a resemblance in the form of the fruit, and the purposes to which it is applied, that the West Indians have called the crecentia of Linnaeus the calabash-treer. (See Crescentia.) Hence also the cucumis of the chemists are said to have received their name. 3. The triumpht or long gourd. C. longa, folio molli, florido; Willd. 2. 121. Raddi Fl. 215. Morav. Hist. 2. 22. § 1. tab. 5. fig. 3. Rumph. Arch. 5. 397. § 2. 398. C. longior; Delc. Pempt. 669 and 707. C. angulata teres & obtusata; Tourn. 107. The great length which the fruit of this variety sometimes acquires, in a conic-decim degree, on its position. When it lies on the ground, it is often curved in the shape of a crescent, and sometimes becomes tumid at both ends, like a pilul. It differs also much in size. The thickest have the ten-dril rind, and the moll excessive pulp. They are eaten in America, and in the South of Europe. The last two varieties differ chiefly in size, and are united by several intermediate ones. They are considered by Sauvages as properly one, differentiated from the first by having toothed, not entire leaves.

The third variety is said by Hasselquist to grow in all parts of Egypt, and in Arabia, wherever the mountains are covered with a rich soil. The poor people eat it boiled with vinegar, or all the shell with rice and meat, making it into a kind of pudding. The fruit of all three, especially of the first, is hard, and almost woody; when dry, and is made into drinking cups, as well as other domestic utensils, for the use of the lower ranks of people. This species appears to be a native of All, Africa, and America, and it is only since the discovery of the latter, that many of its numerous varieties have been obtained.

11. The pato, or large-fruited gourd. C. maxima; Duchceine. Melopepo fructu maximo abo; Tourn. 106. C. melopep. folio non albo, fructo maximo abo; Icr. Bauh. 2. 241. Pepo maximosi indicii comprensos; Lob. Ic. 641. Pepo comprensos majoris; Bauh. Pin. 311. Raddi Fl. 642. Cucurbita pepo; Linn. "Flowers bell-shaped, breadth interiorly at the base; border reflexed; fruit round, compressed." Lam. Duchceine doubts whether this be really an original species. Sauvages, the first botanist who called it pato, pronounced it distinct from the next, and characterized its fruit in concise but lively terms, as a sphere with compressed poles, and invaginated margin, well delineated in Tournouer's figure, tab. 34. La Mareck agrees with him, and observes, that it differs from the following in the form of the flowers, in its roundish heart-shaped leaves, on nearly horizontal pedicels, and in the greater strength and size of all its parts. The fruit, in particular, is sometimes not less than thirty pounds in weight; with
with a thin rind, and a firm but juicy melting flesh. La Mark observes, that its enormous size is probably the effect of cultivation. It was not known before the sixteenth century, and no account of its origin has been preferred, a circumstance which seems to us to strengthen the doubt, with respect to its being an original species. There are three principal varieties: the common yellow, with a fine yellow flesh, which is the largest; the large green, with an orange-red flesh; and the small green, which is much esteemed on account of its continuing in a fit for eating longer than the other kinds.

III. The pepo, or pumpkin gourd. C. pepo; Duches. C. ovifera, C. pepo Linn., and C. melo-pepo; Linn. "Flowers bell-shaped, narrowed within at the base; border erect." This species, like the preceding, has bell-shaped yellow-flowers; but its corolla is narrowed at the base, so as to be almost funnel-shaped, and its border is always erect. Both have whitish elliptical, not truncated or margined seeds. The present may be divided into two principal families. 1. The melon gourd, or melon gourd. This family is rather of an ambiguous nature, and has been little noticed by botanists. The oval form of its seeds, the shape, and colour of its flowers, the angular figure of its leaves, and the diploidity of its branches, prove it a gourd; but its soft woolly leaves, its pale-hairy and nearly wheel-shaped flowers, the long green points of its calyx, and the musky taint of its fruit, denote its alliance to the calabashes. In the French West India islands it is called citrouille melonée, and is cultivated in the south of France and Italy, under the name de citrouille: musqué. Like the next family, it has numerous varieties, distinguished by the shape and colour of the fruit, as it is either flattened at the ends, spherical, oval, cylindrical, or pellii-shaped, is greater or less in size, and more or less ribbed; is of a deeper or paler green on the outside, and has its flowers varying from a very pale yellow to a deep orange. 2. The polymorphous gourd. The common character of this family depends on the size and regularly conical shape of its flowers, the oblique, or almost erect, never-horizontal direction of its leaves, and their brown colour and roughness, resulting partly from the dryness and brittleness of their surface, though their nerves and veins are very succulent; and partly from their hairs, which are stiff and tufted at the base. In all other respects it is variable, without end. It may, however, be divided into five subordinate families: a. The false oranges and false coquintins. C. polymorpha colaeocephala; Duch. Pepo rotundus aurantii forma; Bauh. Pin. 311. C. minima lutea amara; J. Bauh. 2. 231. Curcurbitula pila palmata non multo major rotunda; J. Bauh. 2. 248. Pepo fructu immo phlazero; Tourn. 105. C. magnitudine aurantii; J. Bauh. 2. 227, &c. Colocynthis pomiformis cortex maculato; Bauh. Pin. 314. This family, of which the false oranges may be considered as the principal, and the false coquintins as a variety, is, from the following characters, supported by Duchefne and La Mark to approach nearest to the primitive flat of the gourd. Leaves about the length of the petiole, moderately cut. Male and female flowers equally distributed over the whole plant, making it very fertile. Fruit spherical, with a diameter at the mouth. The length of the flower, regularly three-celled; rind forming a rather solid shell, at first dark green, at length of a lively orange; flesh yellowish, fibrous, bitterish, soon becoming dry, and then acquiring somewhat of a mucilaginous texture. Seeds very numerous, rather large. B. The concordette, false pears, or milky coquintins. C. polystoma pyrundin; Duchef. Colocynthis pyrundin, five pepo amarus; Bauh. Pin. 313, and C. oblonga; Bauh. Pin. 313. Tourn. 103.

C. circinatus amara pyriformis variegata et oblonga viridis et parva alba; J. Bauh. 2. 232. 229. C. ovifera; Linn. Mant. 126. This division is very confiant in its principal characters; and though it has many varieties, they diverge from each other very little, so that it almost seems to claim the rank of an original species. Its leaves are rather more cut, and it is altogether commonly more slender than the preceding. Its flowers are the smallest in the whole genus; its seeds are small, and very much elongated; its fruit also is small, often pear-shaped, or at least egg-shaped; the rind generally brownish-green, marked with milk-white bands and spots; the flesh very white, at first moist, afterwards fibrous and friable. 7. The barbarine. C. verrucosa; Bauh. Pin. J. Bauh. Linn. Melopepo verrucosus; Tourn. C. Turbinatae majoris albae, & variegati coloris. J. B. The fruit of this division is distinguished by the remarkable warts or tumours on its surface; it is sometimes about the size of an orange, but in most of its varieties larger; its shell hard and woody, generally entirely yellow or spotted, but sometimes marked with green bands. 8. The giramous and citronelles. Oblong-fruited cucurbits. Hestia pepo, Linn. Melopepo; Bauh. Pin. 311. Tourn. 105. C. folias aperiat paezehba; J. Bauh. 2. 218. C. pepo Linn. Pepo vulgaris, Rtt. huf. 673. Pepo virginianus. Bauh. pin. 311. Maecopepo virginianus; Rtt. huf. 641. This division takes its chief character from its oblong fruit. The giramous are distinguished from the citronelles by their flesh, which is commonly paler, and always of a finer texture; and by their leaves, which are generally more deeply cut, those of the latter being often only angular; but their most striking difference is in the size and colour of the fruit; which in the former is often very large, and generally of a dark green colour; in the latter small, pale green, yellow, or even white. There are, however, intermediate varieties which bring them together. One of these has long been known in the south of Europe by the name of Malta or Barbary cucumbers. 1. The Patison, or squash, melopepo cypriformis; Bauh. Pin. 312. Tourn. 106. Lob. &c. 643. C. melopepo; Linn. C. cypriformis five Italiana; J. Bauh. 2. 224. Alfo C. cypriform & alines omnes. J. Bauh. 2. &c. The plants of this division affect a kind of contradiction in all their parts, an hereditary malady, which has been continued more or less strongly marked through several ages, and may always be reproduced at pleasure by sowing the seeds of the most deformed plants. The stems and branches are peculiarly stiff and strong, in consequence of their knots being placed near together; hence instead of extending themselves easily along the surface of the ground, they rise abruptly on one side or the other, sometimes almost perpendicularly, and do not touch the earth till they are weighed down by the increasing heaviness of their fruit. The small flowers have, in consequence, peduncles more than double the usual length, without which they would not find room to expand; the petals also are similarly lengthened, and not being able to support the leaves, are several times curved, as if they were about to become twisting. The fruits, it is observed by Linnaeus, are furnished with tendrils, though they are neither climbing nor procumbent; but Loudieri affirms that in China and Cochinchina they always climb, whenever they meet with any support. The fruit has a fine rind, like that of the false coquintins, but generally softer with a finer, white, and rather dry flesh. It is generally four or five celled, and varies much in its form, being sometimes round, sometimes pear-shaped, and frequently appearing as if it was squeezed in by the nerves of the calyx; its flesh swells into various protuberances, which sometimes form ten longitudinal ribs, and sometimes surround either its apex or
of its bafe: sometimes it is contracted in the middle, and
fuddles expands into a large head, like that of a young
mushroom, sometimes it is entirely round, like a bucker,
and either regularly or more frequently irregularly plaited.
The seeds are short and roundish, with an uneven surface.
This variety is common to both hemispheres, and is much
cultivated in the warmer climates, as a wholesome effluent.
The fruit is commonly gathered in America when half
grown, and eaten boiled as a sauce to meat. It is of great
use in long voyages, as it may be kept for several months
fresh and sweet.

IV. The paffle and water melon. C. anguria: Duch.
C. cirilius; Linn. Anguria cirilius delta; Bauh.
pi. 312. Tourn. 106. Citrulus folio colocolythis feto-
to; J. Bauh. 2. 235. Anguria indica; Rumph. amb. 5.
460. tab. 143. fig. 1 Citrulus officinarian; Lumb. t. 649.
Jacq. anguria, Pif. Braf. 252. "Corollas somewhat
wheel-shaped,' feeds coloured; leaves laminated." Lam.
The deeply divided leaves of this species are stated by Lin-
neus and other botanists to be its peculiar character.
This, however, is not perfectly correct; some of the varieties
of this gourd having their leaves almost, if not quite as much
laminated. But those of the water melon may always be
distinguifhed by the firmness and brittleness of their sub-
stance, and their much more nearly vertical direction. The
corollis is less spreading than that of the calabahs; and
smaller, less bell-shaped, more deeply cut, and of a paler
yellow than that of the gourds. The fruit is roundish or
oblong, with a fine, thin, even rind, remarkable for its
frogs, stippled like those of the pea urchin, not parallel-
as, as in the gourds. The seeds are conically of a deeper
 colour than the flesh; while in the three other species they
are always much paler. Dechene mentions three principal
varieties, a., with firm flesh, c, with reddish flesh, y, with
white flesh. The first is particularly distinguished in the
south of France by the name of paffle, and is eaten only
in France, or baked with sweet wine, like Burgundy pears.
The two latter are the true water melons, so much esteemed
in all hot countries for their pleasant, cool, refreshing flesh,
which is always of a deep colour, and so succulent that
it melts in the mouth; the central pulp is of a liquid,
that, like the milk of the coena nut, it may be sucked or poured
out through a hole in the rind, and affords an agreeable be-
verage; but this must be done when the fruit is first ga-
 thered, otherwise it will soon decay; the fruit is therefore
generally brought to the market with the hole plugged up.
It is a native of the East Indies, Cochinchina, and China,
and is mentioned by Maregrae as growing in Brazil; but
may have been brought thither by the Portuguese. On
account of its excellent qualities, it is much cultivated in
all the warmer countries of the four quarters of the globe,
and is laid by Huflequid to serve the Egyptians for meat,
drink, and pharmacy, as long as it continues in season, which
is from the beginning of May to the end of July, or the
beginning of August.

Propagation and Culture—The calabahs and the gourds
may be propagated by fowing their seeds on a hot-bed in
April. When the plants are sprung up, they should be
transplanted into another moderate hot-bed, where they
should have a great deal of air, and be treated hardly; as
soon as they have got four or five leaves, they may be trans-
planted into holes made in an old dunghill, and be allowed
a good deal of room to spread. They are sometimes for the
like of: growth, fattened to walls, posts, or hedges; and
sometimes trained over harbours, which they soon entirely
cover, affording a pleasant shade. The orange-shaped gourd
is generally preferred for this purpose, on account of its
handsome fruit. None of the kinds are cultivated in this
country as efcuents. The calabahs are more tender than the
gourd, and require a more careful treatment; but if
covered with hand-glaffs when young, they will flower and
fruit in the open air. The water melons may be raised in
the same manner, and on the same beds with melons and
eyour cucumbers, only they must have more room, and must
be constantly kept in a good heat, with a free admission of
air in favorable weather. The best lots to cultivate in
our climate are those with small round fruit, which come
from Alfrachan; for those with large fruit scarcely ever
eren: but in the best state to which they can be brought
here, they are not much desired, and are very seldom
raised.

Cucurbita lanata, frtuta longa anguria varia, flore can-
dido; Thl. Subb. See Trichosanthes Anguria.

Cucurbita, in Gardening, comprises plants of the train-
hing herbaceous annual kinds, of which the species prin-
cipally cultivated are, the bottle, or long gourd, (C. lego-
aria;) the pumppon, or pumpkin gourd, (C. pepo;)
the warted gourd, (C. cucurbita; the squaw gourd, (C. melo-
) pepo;) and the water melon, (C. citrulus.)
The first species has a thick, trailing, dowiy stem, branch-
ing into numerous spreading runners, extending along
the surface of the ground, fifteen or twenty feet in length.
The leaves are large, roundish, heart-shaped, and woolly;
the flowers large and white, succeeded by whitish-yellow
fruit, shaped similar to a bottle, having a large roundish
belly, and smooth neck, two or more feet in length, and
from nine to eighteen inches or more round, with a liguous
durable shell.

The second species the stem is thick, angular, extremely
hispid, branched, climbing by means of birt tendrils, or
extending to the distance of forty feet. The leaves cor-
date, large, roundish angular toothed, wrinkled and hairy
on both sides. The flowers are of a yellow colour; and
the fruit roundish, ovate globular, or oblong ovate, being
pale green on the outside, having within a pouncy infid-
white pulp or flesh. Its season of flowering is from June to
August.
The stalks in the third species are trailing, very branchy
and spreading, running on the ground as in the last fort;
the leaves are large and lobed, and the flowers yellow, be-
ing succeeded by fruit of a roundish, knobby, wortd ap-
pearance, white, and of a middling fize.

In the fourth species the stem is roundish, hairy, pro-
cumbent, or climbing. The leaves lobed-angular, and
the flowers yellow: the fruit large, reddish-yellow, or yellow-
white both within and without, mostly roundish, but often
flat at both top and bottom, conflatly turulofe, but rarely
warted. It is common in North America.
The stem in the fifth species is round and fruted, long,
branched, and hairy; the flowers are yellow; and the fruit
large, smooth, round, or oblong, a foot and a half in
length, within watery, sweet, very red or pale. It is a
native of South America.

There are numerous varieties in all thefe different species.
In the first species the chief of these are, the common
long-fruited, the long probterant-bellied, the long fickle-
shaped, the long taper, and the long-turbinate bottle-
gourd.

Of the second fort there are several varieties, as the com-
mon large round-fruited yellow, the oval yellow, the oblong
yellow, the fickle-fruited, the bell-shaped, the roundish;
the pinkish, the parti-coloured, the marbled small round,
the orange-shaped, the pear-shaped, the turbinate, the hemi-
spherical or semi-globular, the egg-shaped, the striped
roundish,
roundish, the striped egg-shaped, the striped turbinated, and the striped pear-shaped pompon, &c.

Of the third kind the principal varieties are, the roundish-warted, the oblong-warted, the flat-warted, the bottle-shaped-warted, the orange-shaped-warted, the lemon-warted, and the yellow-fruited.

Of the fourth sort the varieties are, the common broad flat, the buckler-shaped, the conical citron-shaped, the flat-sided, the turbinated, the hemispherical, the depressed, the star-shaped, the white-striped, and the yellow-striped squashes.

And of the fifth species the chief varieties are, the large round red fleshy, the large round white fleshy, the large oblong, and the small round water melon.

Method of Culture.—In the manner of raising of most of these plants, as well as in that of their after culture, the aid of artificial heat and shelter is generally requisite, especially when to be forward at an early period.

Method of Culture in the Gourd kind.—This is always effected by sowing the seed annually, either on light hot-beds, or in the open ground, in the spring months; but the former is probably the best mode, as the plants are more early. In the first method, it should be performed about the latter end of March, or the middle of April; and when the plants have attained a pretty strong growth, and been hardened by the free admission of air, they should be carefully removed into the situations where they are to remain in the open ground with balls of earth about their roots, as unlefs this be done they do not succeed so perfectly.

In the latter mode of raising the plants, the seed may be sown in the natural ground where the plants are to remain, about the middle of May; open funny situations being provided for the purpose. The mould should be made fine, and the seed put in to the depth of about half an inch, three or four seeds in a place being sufficient.

Some gardeners properly advise the putting in a little dung in the situations where the seeds are to be sown, in order to forward the plants, and when they come up, to protect them by hand-glaflies. This is particularly useful for the more tender kinds, and, in all the sorts, renders them considerably more forward.

When the plants are of some considerable growth, they should be thinned out to one or two good plants, and be plentifully supplied with water when the season is hot and dry, especially after they have begun to run or spread; as by this management they will extend very considerably, and grow with much greater vigour.

Where any of the sorts are cultivated for the purpose of ornament, they should be trained to strong stakes in order to show their flowers more fully, and appear more ornamental.

The seed should always be saved from the beet and most perfectly ripe fruit of the different kinds, being carefully freed from the pulp, and preferred in a dry situation till the period at which it is wanted.

Method of Culture in the Water Melon kind.—The usual mode of culture in these plants, is by sowing the seed annually about the latter end of February or beginning of the following month, on pretty subflantial hot-beds, keeping them protected by the glaflies when the weather is bad; after the plants have attained a little growth, they should be pricked out into small pots, two plants in each, being replunged in the hot-bed. When they begin to throw out runners, they should be removed into the fruiting hot-bed in the same manner as practiced for cucumbers and melons, only one pot of plants being employed for a two or three light frame; the beds being previously earthed over, and hillocks raised to the height of twelve or fifteen inches in order to receive them.

The necessary after-management in regard to flopping the plants, the admission of air, the giving of water, covering the glaflies in the nights, and keeping up the heat in the beds by linings, must be regulated in the same manner as for the melon. The spaces between the hills should be gradually earthed up, and the vines be trained so as to fill the frames without croffing, or being too much crowded. When the vines begin to flow and set fruit, the heat should be well supported and kept up, that they may be brought forward as to ripen in due time. When the fruit has attained the state of maturity, it turns rather yellow, and becomes somewhat soft at the top, as in that of the melon.

In the cultivation and management of all the sorts and varieties of these plants, where the object is the fruit, such feed as has been kept some years should constantly be employed, as new feed is apt to grow too luxurantly, and the vines of course afford but a very scanty supply.

CUCURBITACEÆ, in Botany, the forty-fifth natural order in the Philosophia Botanica of Linnaeus, and the thirty-fourth in the Pothumous Prosecutions published by Giseke. In the Philosophia Botanica it contains the following genera: paffiflora, feuillea, momordica, trichofanthes, cucumis, cucurbita, bryonia, ficys, melothria, gronovia? In the Prosecutions, anguria and cladeterium are added, and the whole placed in the following succession: gronovia, anguria, cladeterium, ficys, melothria, bryonia, cucurbita, cucumis, trichofanthes, momordica, feuillea, paffiflora. In this order there are no proper trees, but some have a perennial, woody, climbing item; in others the item is herbaceous, but the root perennial; the fruit is united, the leaves in all are alternate and simple. The stipples always at the origin of the leaves. The glands are generally on the petioles, or at the base of the leaves, or in the leaf itself. All have tendrils by which they climb whenever they find suitable supports, without which they are more or less procumbent. The calyx is five-cleft or five-parted. The corolla is one-petalled, five-petalled, but in many is so deeply cut as to seem five-petalled. The flaments are inserted, not on the receptacle, but on the inside of the calyx, to which the corolla is attached. The flaments are generally five, but often con- nected as to seem only three. The anthers are often united, so as to form one serpentine body, the apex of one growing to the base of another. The ryle is rather thick, and the stigmas most commonly three, often bifid. The fruit is generally fleshy, three-celled, having its seeds bedded in pulp, and on that account rather a berry than a pome. Most of the genera are either monocious or dioicus. The fruit of none is positively wholefome, and of some highly pernicious, but of others is generally thought pleafant, and if eaten with caution, and not in too great quantities, is at least innocent.

The cucurbitaceæ are also the second natural order in the fifteenth class of Jussieu, of which he has given the following character. Flowers monoicus, or more rarely dioicus, or very rarely having in each perfect flaments and pistils, as in gronovia and melothria. Calyx (the corolla of Linnaeus and Tournefort) superior, contracted, just above the germ, dilated beyond, quincuefied, submarginal, falling off late, with five green appendages on the outside at the base of the bell-shaped expansion, (the calyx of Linnaeus and Tournefort,) which may be called exterior segments of the calyx, since they fall off with it. Corolla none. Stamens of the barren flowers most frequently five, inserted into the contracted part of the calyx; flaments and anthers, in some distinct, in others entirely or partially united; anthers one-celled, oblong, fixed to the top of the flaments, often running
CUD

running into a twice-curved line, four of them generally in pairs, and the fifth solitary. Germ abortive, or barren. Filaments of the fertile flowers barren, or none. Germ inferior. Style one, or rarely several. Stigma most frequently divided. Fruit inferior, berried, often with a solid rind or shell, once-celled, with one or many seeds, or many-celled with many seeds; receptacles of the seeds lateral, or affixed to the inner surface of the fleshy part. Seeds cartilaginous or crustaceous; corculum flat, without a periphrasm.

Root most commonly tubercous. Stem herbaceous, climbing or prostrate, zig-zag. Leaves alternate, furnished with axillary tendrils, fimbria, heart-shaped, or palmate, or rarely digitate, often rough, or furred with callosous points. Flowers axillary, one or more on a peduncle. The genera are thus arranged by Jussieu. 1. Style single. Fruit one-celled, with one seed. Gronovia, ficys. 2. Style single. Fruit one-celled, with numerous seeds. Dryonia, elaterium. 3. Style single. Fruit many-celled, with numerous seeds. Melothria, anguria, monordica, cucumis, cucurbita, trichofantica, ceratofanthes. 4. Styles several. Dubious cucurbitaceae. Feuillea, lanonia. V. Allied to the cucurbitaceae, distinguished chiefly by a superior germ. Passiflora, marucula, tacaoquina, papaya.

Venetan has the same genera, only adding a luffu from Caranilies, and omitting feuillea and lanonia, without taking them up in any other part of his work.

Cucurbitifera arbor, botrotandis folis coniferis; Pluk. See Crescentia cecropioides.

Cucurbitifera trifoliis simplici medica; Pluk. See Cucurbitina nepeta.

Cucurbitini Lumbricri, in Zoology, are broad worms that breed in the intestines, like the fennel of a gard.

Cucurbitula in Surgery, a cupping-glafs, or instrument, used in the operation of cupping. See Cupping-Glafs.

Cucuri, in Ichthyology, the Brabian name of a fish of the shark kind, but not inofficious, called cajfion by the Portuguese.

It is about two feet and a half long. The head ends in an hyperbolic figure, and the mouth is placed far below its end; it has only one row of teeth, and those very small; its eyes are of the size of a large pea; its belly is of a silver white. Willughby.

Cucuron, in Geography, a small town of France, in the department of Vaucoles 9 miles S. of Apr.

Cucurucu, in Zoology, the name of a serpent found in America, growing to ten or twelve feet long. It is very thick also in proportion to its length, and is of a yellowish color, strongly variegated with black spots, which are irregularly mixed among the yellow, and often have spots of yellow within them, and are plainly black. It is a very poisonous species, and greatly dreaded by the natives; but its flesh is a very rich food, and greatly esteemed among them, when properly prepared. Ray.

Cud, in Rural Economy, a term applied to the imperfectly maficked food in animals of the cattle and some other kinds, which is brought back from the rife stomac, to be chewed over again in a more gradual and deliberate manner, at the leisure of such forts of heat; being, after this process, transmitted into the second stomac to be digested more perfeecly. When this process is oft, or the power of the animal to perform it lapseded, it is suppos'd by some to be in a morbid condition, and to require the use of the strengthenings remedies of the acid and aromatic better kinds; whence, to chew the cud, signifies to ponder, think, or ruminate upon a thing.

Cud weed, in Botany. See Cucurbitina, Graphium, and Filago.

CUDA, in Ancient Geography, a river of Spain, in the territory of the Lusitanians, which ran from the S. to the N., and discharged itself into the Durius.

Cuddalore, in Geography, a town of Hindoostan, on the coast of Coromandel, in the Carnatic, situated near where St. David's church, now belonging to the English. It was taken by the French, under the command of general Lally, in the year 1758; and again in 1754; but in 1783 it underwent a severe sige by the British forces, under the command of general Stuart. At this time it was become the principal place of arms held by the enemy on that coast, who had made great exertions in fortifying it; and it was garrisoned by a numerous body of the British forces of France, well provided with artillery, and every necessary for a vigorous defence. The contest was severe, and at length the British forces proved victorious. Peace between the belligerent powers of Europe terminated the dispute. Cuddalore, where the French have had a factory, and within sight of Pondicherry, is naturally a very strong situation; and would have been the most commodious, perhaps, for the chief British settlement; since the security of Tanjore, and the conveyance of supplies from it, must ever be a capital object. Besides, as the S. W. monsoon is the season of naval warfare, Pondicherry has the advantage of being to windward of Madras; and the French, at the same instant, accomplished the double purpose of keeping to windward, and of protecting their capital settlement; and receive assistance from it in return. The British fleet, in order to watch the enemy, retires 100 miles from their principal settlement, and receives only a precarious assistance from the shore; that is, from Cuddalore, or its neighbourhood, their usual station. N. lat. 11° 41'. E. long. 79° 45'.

Cuddapah, a town of Hindoostan, and capital of a province which bears the same name; belonging to the Nizam of the Deccan, through which passes the river Pennar. The town is situated on the route from Pondicherry and Arcot to Canaul; distant from Hydabard 230 miles, from Madras N.W. 153 miles, from Nagpore S.W. 551 miles, and from Seringapatam N.E. 220 miles. N. lat. 14° 32'. E. long. 78° 54'.

Cuddapah, a country of Hindoostan, bounded on the N. by the country of Golconda, on the E. by the Carnatic, on the W. and S. W. by the Mylore; ceded to the Nizam of the Deccan by Tipoo Sultan. The principal towns are Cuddapali, Gandicotta, and Combam. Cudidy, in the Fables, Man's War, is a place lying between the captain lieutenant's cabin and the quarter-deck; and divided into partitions for the quarter, and other officers.

It denotes also a kind of cabin near the stern of a lighter, or barge of burden.

Cudresis, in Geography, a town and bailiwick of Switzerland, in the canton of Berne, on the N.E. borders of the lake of Neuchatel. This town was taken by assault, in 1475, by the Swiss cantons, and allotted to the cantons of Berne and Friburg, who reffered it to the duke of Savoy. In 1536 the inhabitants furered to the Beroeois without relief, under which canton it remains: 5 miles S.E. of Neuchatel, on the other side of the lake, and 25 W. of Berne. N. lat. 46° 50'. W. long. 6° 44'.

Cudupariti, in Botany, Reed. See Gossypium arabicum.

Cudworth, Ralph, in Biography, the well-known author of the "Intellectual System," was born at Allton, in Somersetshire, in the year 1617. He was educated at tritl under his father, who was a man of fame celebrity in the church; but at his death, which happened while our author was...
was only about eight years old, he was transferred to the tuition of his father-in-law, Dr. Stoughton. He made so rapid a progress in grammar learning, that at the age of 13 he was declared fit for, and actually admitted, a pensioner of Emanuel College, Cambridge. Here he took his degrees, and about 1659, or 1660, he was elected fellow of his college, and became so eminent as an instructor of youth, that at one and the same time he had 28 pupils; a circumstance which, at that time, had never been known in the largest colleges in the university. Among the young men committed to his care were Mr., afterwards Sir William Temple, and the celebrated Tillotson. He was shortly after presented to the rectory of North Cadbury in Somersetshire; and in 1642 published a treatise on the Lord's Supper, which gave rise to a long controversy, that seems to have been completely set at rest by an able work on the same subject, by Dr. Hill, prebendary of Wellsminster. In 1645 he was unanimously elected Regius professor of Hebrew; an office for which his great learning, and skill in the Oriental languages, peculiarly qualified him. He now devoted all his time, which, in his academical pursuits and studies, had previously consumed, to the practice of his office. In 1647 he printed a sermon, which he had preached before the house of commons: the dedication contained some admirable sentiments upon the nature of religion, and the value and importance of learning; which reflect much honour on the liberality of his principles, and was a well-timed reproof to the prevailing bigotry and fanaticism of his contemporaries. In 1651 he took the degree of doctor of divinity; and, because his income at the college was not adequate to his wants, he left the university; but was shortly after solicited to return, to which he consented, and was chosen master of Christ's College, Cambridge. Here he spent the remainder of his days. In 1656-7 he was appointed, by the grand committee for religion, to confer about a new translation of the Bible; whose labours were terminated by the dissolution of the parliament. Shortly after he obtained the vicarage of Athwell in Herts; and in 1657 he was installed prebendary of Gloucester. In the same year he published "The true intellectual System of the Universe," a work full of capital reasoning, and containing much curious learning. The object of this publication was to confute the principles of atheism, which had been but too prevalent, as an opposite extreme to the cant and hypocrisy so common in the time of the commonwealth. Many excellent divines lifted up their voice, and exerted their pens against the atheism, pantheism, and irreligion, which was encouraged by the licentious court of Charles II.; but none with more vigour and success than Dr. Cudworth. "None better knew," says the learned Mohun, "how to use the arts of reason and learning, to conquer the presumptuous ignorance of Hobbes, who had acquired a great reputation at court." The intellectual System was only a part of what Dr. Cudworth had intended; but death prevented the completion of a labour, which, in its present unfinished state, has acquired for the author a large share of solid reputation. The candid critic will, however, see and acknowledge defects in this work. Dr. Cudworth was attached to the Patristic philosophy, and frequently, like his master, enveloped truth in mystery. In his physics he has adopted the corporeal system, adding, to the doctrine of atoms, that of a certain middle substance between matter and spirit: to this he gave the appellation of "plastic nature," which he supposed to be the immediate instrument of the divine operation. This hypothesis was the foundation of a controversy between Boyle and Le Clerc. Dr. Cudworth died in 1688, at Cambridge, in his 71st year. He left behind him other works, published, and in MS; the latter, after many revolutions, have found a place in the British Museum. They were left by the author to lady Malham, his daughter, who preferred them with pious care so long as she lived. They were afterwards sold to Mr. Davis, a bookseller in Piccadilly, who parted with them, as the MSS. of Mr. Locke, to the proprietors of a Bible that was edited by Dr. Dodd. This, says Dr. Kippis, was the origin of Dr. Dodd's Bible. Such extracts having been made as were deemed necery for the purpose, the original was returned, when Mr. Davis sold them outright for 40 guineas, as the MS. of Locke. The deception was soon discovered, and their proper owner traced. The purchaser claimed a return of his money; and they were at length negociated for by the curators of the British Museum, as the remains of the excellent Dr. Cudworth. Of their author it may with truth justice be affirmed, that he was not only distinguished by very extensive learning and profound knowledge in metaphysics and philosophy, but by exemplary piety, and great moderation and rectitude of character, which rendered him an honour to the institutions where he presided, to the university of Cambridge which he attended, and to the church and age in which he lived. Mr. Granger observes, that Dr. Cudworth held the same rank in metaphysics that Dr. Barrow did in sublime geometry; and his daughter beheld the learned and accomplished lady Malham, whose memory deserves to be held in high honour, both for her own attainments, and her unfallen friendship to Mr. Locke. 

CUE, or QUEUE, the hair tied in form of a tail. Military men, and particularly soldiers, have been made to wear queues of different forms, at different times.

CUE, or Cumbe, a term, or innuendo, given to the actors on the stage, when, or when, to speak. See Prompter.

CUE, in Geography, a term of Peru, in the province of Adinariza; 100 miles S. 3 W. of Tauris.

CUENCA, a jurisdiction or province of the vice-royalty of New Granada, or Santa Fé, in South America, bordering on the southern parts of Riobamba, and divided into two departments, of which the capital is one, and that of Alausi the other, which reaches to Riobamba, is governed by a deputy of the correidor, and besides the Aliento, contains four villages; but that of the city of Cuenca includes 10. This district, which is situated on the table land of Quito, is of benign temperature, producing abundance of cattle, sugar, cotton, and grain, and has considerable manufactures of cotton cloths. The terrible earthquake in 1757, which totally ruined the city of Riobamba, so that of 9200 persons, only about 300 escaped, seems not to have extended south so far as Cuenca. Among the great variety of mines in this province, those of gold and silver are not, according to the common opinion, the least numerous. From a story, which is of ancient date, and which has descended from one generation to another, related by Ulloa, it is inferred, that a hill in this district, called "Suapucaca," or the Devil's hill, contains an inexhaustible treasure.

Cuenca, the capital of the above-mentioned jurisdiction, situated in S. lat. 5° 5' 49", and long. 29° 27' W. of the meridian of Quito, on a spacious plain, along which, at about half a league N. of it, runs a little river, called Macachanga; and close to the S. side of the town runs another, known by the name of Matadera. Besides these, at the distance of a quarter of a league, runs another, called Yasunay; and about the same distance is another, named Los Banos, from a village of that name through which it runs. All these rivers are in some feaons fordable; but at others, can only be crossed with safety over the bridges.

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The plain in which Cuenca stands extends about six leagues from N. to S.; and the four rivers form, at a small distance, by the confluence of their streams, a very large river. To the S. of the town is another plain, about two leagues in extent, and exhibiting, by its great variety of regular plantations of trees, a very delightful appearance through the year. The streets of this town are straight, and of a convenient breadth; the houses of unburnt bricks, are tilled, many of them being of one story; and the suburbs, inhabited by the Indians, are mean and irregular. The town is supplied with water by several streams; and on account of its admirable situation, and the fertility of the adjacent soil, it might be rendered the paradise, not only of the province of Qatar but of Peru itself; but its advantages are, either through ignorance or indolence, not duly improved. Cuenca was founded in the year 1557, by Gil Ramirez Valdivieso. It contains three parishes; that of the great church consists of Spaniards and Mellizos; the two others, called San Blas and San Sebastian, are appropriated to the Indians. Here are convents of Franciscans, Dominicans, Augustins, and the fathers of Mercy; a college of Jefuitas, and two nurseries. Here is also an hospital, though so ill managed as to be in ruins. The magistracy is composed of regidores and ordinary alcaides, chosen annually; and their head is the corregidor. Here is also a chamber of finances; the revenues of which consist of the tribute of the Indians of this department, together with that of Alcali, the jurisdiction of Loja, and the government of Jean de Bracamoros; the duties on provisions, and the customs collected at Naranjal. The inhabitants are of a very indolent temper; and the vulgar are rude, vindictive, and very profligate. The women, however, are generally very industrious: they spin and weave bays, famous for their quality and brilliancy of colour, in every part of Peru. They also buy and sell, and manage the whole of the little commerce, by which their families are supported; whilst the males surrender themselves to flot, and its concomitant vices. The whole number of inhabitants in this town is computed at 20 or 30,000 persons; and those both of the town and jurisdiction are commonly known by the name of Morlacos. The adjacent country is finely intermixed with farm-houses and plantations of lagar-canes; some parts are cultivated for corn, others appropriated to sheep and horned cattle, from the milk of which they make great quantities of good cheese.

Cuenca, a town of Spain, in New Castile, anciently called Conca, the see of a bishop, suffragan of Toledo, situated between two lofty mountains and two small streams, which form the Xuitar, taken by the earl of Peterborough in 1702, and from a return by the duke of Berwick; 75 miles E. of Madrid, and 100 W. N.W. of Valencia. N. lat. 40° 10', Long. 14° 35' E. of the Peak of Penericle.

Cuenca, or Cueva, a town of Spain, in Aragon, on the Gallega; 100 miles N. of Saragossa.

Cuerenheit, or Cuerenhart, Dirick, or Theodorus Volckhart, in Biography, an engraver and a literary character, was born at Amsterdam in the year 1542. He resided a long time at Harlem, where, in concert with other artists, he engraved many subjects from the scriptures, from the designs of Martin Humilck, Francis Park, and other masters. His plates are wrought in a careless negligent manner, imitating pen-drawing. They are chiefly middling-sized, engt.-ways, and marked sometimes with his name, at others with a cipher, composed of D. V. & C.

Cuerenheit is so little remarkable for his engravings than for the singular adventures of his life, which was published at Amsterdam at the head of his works in 1630. The strange opinions which he maintained, in his several religious disputes, occasioned him to be frequently imprisoned, and at length banished his native country, when he retired to Gouda, where he died in 1592. He had the honour to count the celebrated Henry Gortzius amongst his disciples. Heber. Manual des Arts.

CUERNABACA, or Cornavaca, in Geography, a town of N. America, in the province of Mexico; 20 miles S.S.W. of Mexico.

CUERPO. To walk in cuerpo, is a Spanish phrase for going without a cloak; or without all the formalities of a full dress.

CUERS, in Geography, a town of France, in the department of the Var; 12 miles N.E. of Toulon, and 9 miles N. of Hyeres. It is the chief place of a canton, in the district of Toulon, with a population of 48,000 individuals. The canton itself has 14,836 inhabitants, in 9 communes, upon a territorial extent of 207½ square miles.

CUEYTE, a river in the island of Cuba, which abounds with alligators.

Cufa, or Cupha, a town of Asiatc Turkey, in the Arabian, near the frontiers of Arabia Deserta, on a branch of the Euphrates called Naher-Iba; 60 miles from Bagdad. The Cufic characters, which prevailed among the Arabs for about 300 years, were denominated from this place, where they are said to have been invented. The Cufic alphabet, which continued to be used in writing long after the 12th century, and on coins down to the 14th century, is now found only in the oldest Mahometan MSS. About the year 920, a new system of writing, called "Nikki" was formed and introduced, which, with some variation, still continues to be the general hand-writing of the East. See Arabic Language.

CUFF, or CUFF, Henry, in Biography, a distinguished scholar, and secretary to the unfortunate earl of Effex, was born at Hinton in Somersettshire, where he received the early parts of his education, and from thence removed to Trinity College, Cambridge. He was greatly distinguished among his contemporaries, and became fellow of the college. The impetuousity of his temper led him into difficulties, and a display of his wit caused him to be banished from his college. His reputation was, however, so considerable, that he was invited to, and admitted a member of, Merton College, where he took his degree of M.A., was made fellow, and afterwards promoted to the Greek professorship; and was chosen proctor of the university. When the earl of Effex was appointed to the lord lieutenantcy of Ireland, Mr. Cuff was appointed his secretary, obtained the noble lord's confidence, and was probably regarded more as a friend than a servant in this high station. The earl was charged with projects of ambition very unfavourable to the views of any subject. Conscientious, perhaps, of his master's innocence, or indignant at the treatment he had met with, Cuff repelled the idea of that submissiveness which was recommended by some of his other and more prudent friends. The earl at length fell a victim to his imprudence; was tried, and convicted, and sufferedit death. Previously to the execution of the sentence, he charged his secretary with being not only accessory to, but author of, all his misfortunes. On this charge, which was aggravated by other circumstances, he was brought to trial, convicted, and put to death at Tyburn. He acted with great firmness and heroism, repelling with becoming indignation the several imputations made against him. By Camden, lord Bacon, and Sir Henry Wotton, his memory was treated with a severity, which later writers have thought in a great measure unmerited.

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He left behind him some MSS.; of these one was published about six years after his death, entitled, "The Differences of the Ages of Man's Life, together with the original Causes, Progress, and End thereof." Biog. Brit.

CUFATENSIS, in Ancient Geography, an episcopal town of Africa, in the Byasaene territory.

CUGUACUARA, or CUGUACUARANA, in Zoology, the name of an American beast of prey, the brown Patagonian cat, usually confounded with the tyger, and described by Maregraves as one of three species of American tygers, the jaguar and jaguarine being the two others. It is the Conour of Buffon, and the Felis Concolor of Gmelin; which see.

CUGUACUETE, and CUGUACUARA, the Brazilian names of an animal of the Cervus kind, seeming to be the male and female of the same species, and not distinct animals. The former, according to Maregraves, has no horns; but the cugucucete of Piso has palmed horns, and is probably the male; the horns are composed of three branches; they sent out near the infection, and from this they run up single to the extremity, where they are bifid. As in the roe-deer, the female has no horns, it is probable that the individual pointed out by Maregraves was the female. Upon the whole, the descriptions given of these animals, by both these writers, demonstrate that they are roe-bucks, similar to those of Europe. Marc. Braf. 235. Piso Ind. p. 97, 98. Smelley's Buffon, vi. 31.

We have not seen the animal in England; but its horns, which are very singular in their shape, are preferred in the museum of the Royal Society. This is the animal which Johnfus has figured under the name of the capreolus marinus. Tab. 31.

CUGUGUACU, a name by which Maregraves calls a Brazilian fish of considerable size, and a very good taste, the Perca guttata of Gmelin; which see.

CUI ante Divertium, in Law, a writ, which a woman divorced from her husband hath, to recover lands or tenements from him to whom her husband alienated them during marriage; because during the marriage she could not maintain it.

Cui in Fita, is a writ of entry, which a widow hath against him to whom her husband alienated her lands or tenements in his life-time; specifying, that, during his life, she could not withstand it.

CUJAS, James, in Biography, a celebrated French jurispr, was born at Toulouse in 1750. His origin was low, but his talents and industry overcame every obstacle to his rising greatness. He attained a speedy and a deep knowledge of the learned languages. Ferrer was his preceptor in the law; but the projects which he made in ancient jurisprudence was the result of his own researches. He took for his guides, and as handmaids to the science, the analogy of words, and the facts in history. He became a public professor in his native city; from thence he was invited to the university of Cahors; and, after some other changes, he became, at the urgent request of Emanuel Phillbert, duke of Savoy, professor at Turin. He finally returned to Bourges, where he died in 1590, at the age of 70. His memory has been honoured by the notice and applause of Joseph Scaliger and De Thou. The former speaks of him as a man of a faciol and most friendly disposition, who not only lived on familiar terms with his pupils, but might truly be denominated their father. Under Cujas some of the most celebrated magistrates in France were educated; and from him they imbibed liberal and patriotic principles. De Thou intimates that his life had been threatened by the bigots of the time; and to his deep regret for the subversion of all justice, and regard to the public good, that writer imputes the death of Cujas, at an age beyond which he might have been expected, from the foundness of his constitution, to have lasted. His works are still in considerable reputation. They were first printed together in 5 vols. folio, at Paris, 1584. Moret.

CUJAVIA, in Geography, a province of the grand duchy of Warsaw, which, since the peace of Tilsit, belongs to the king of Saxony, and had formed a part of the last acquisitions of Prussia from Poland. It is irrigated by the Vistula; has a bishop, who resides at Inowliadislaw; and contains the two palatinates of Brzelc and Kujawski and of Wladislaw and Ido Wladislaw, Young Wladislaw. This country is uncommonly fertile, and has many lakes which abound with fish.

CUJAVUS, in Botany, agriflora; Rumph. See Psidium samarum.

CUJAVUS donellica; Rumph. See Psidium myrtissimum.

CUICHIOCA, in Geography, a lake of S. America, in the province of Queto and jurisdiction of Otabalo, about a league in length, and half a league in breadth; situated in a plain, on the side of a mountain of the same name. Near the middle of this lake are two islands, abounding with wild cuyes, a species of rabbits, and deer, which often swim to the main land; but, when pursued by the hunters, disport themselves owing to the lake, and swimming back to their retreat.

CUICULUM, or CUCULI, in Ancient Geography, an episcopal town of Africa, marked in the itinerary of Antonine: 25 miles from Stift.

CUJETE, in Botany, Plum. See CRESCEBENTIA.

CUJL, in Ornithology, a name given by Buffon to the Cuculus honsusus of Gmelin; which see.

CUILLE, in Geography, a small town of France, in the department of the Mayenne; 21 miles N.W. of Chartou Gontier.

CUILLER a Canon, Fr. a fort of fleet of copper or brass, rounded, and one-third open. It is of different sizes, and serves for drawing or taking out the powder of the charge of a cannon.

CUILLI. See CULLY.

CUILLER, in Ornithology, a name given by Buffon to the Cucuca cancorbaga of Gmelin.

CUIRASSSE, a piece of defensive armour, made of an iron plate well hammered; serving to cover the body, from the neck to the girdle, both before and behind.

Some derive the word, by corruption, from the Italian coor, heart; because it covers that part: others from the French cuir, or the Latin corium, leather; whence coriaceas: because defensive arms were originally made of leather.

The cuirass was not brought into use till about the year 1500, though they were known both to the ancient Greeks and Romans in different forms.

Hence, cuiaiTias, the cavalry armed with cuiras of.

In the Roman calendar, we find the name of St. Dominic the cuiraff; a title given to a saint of the eleventh century, from his conflant wearing of an iron cuirass, by way of penance.

CUIASSERS, are a sort of heavy cavalry armed with cuiras. The different German powers had regiments of cuirasiers, and have new troops under this denomination. The late king of France had also one regiment of them; and Napoleon Buonaparte has cavalry now that go by that name, and are esteemed the best that he has.
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We have had none, however, in England since the revolution.

Culiriri, in Ornithology, the name of a Brazilian bird of the Lamius or skrike kind, in no respect differing from the ptianaguara, but that it has a yellow spot upon its head. Probably this is the male of the same species. See Lanius Piniya.

Culissars, or Cuissards, fr. were plates or scales made of beaten iron, which were put on under part of the cuirass, and served for covering and protecting the thighs. This armour was called Cuffe.

Cuit, in Ornithology, a name given by Buffon to the Coracias Bengalaica.

Cuifte, fr. a technical term to express the preparation of saltpetre for the making of gun-powder. See Salt-petre.

Cuipalli, in Natural History, the American name of a very beautifully variegated stone, found in New Spain, and some other places: its name expresses the painted stone. It is a species of Jasper of a beautiful green, variegated with very beautiful lines, and clouds of black, and is in some parts transparent.

Culizaux, in Geography, a small town of France, in the department of Saone and Loire, 30 miles S.E. of Chalons. It is the chief place of a canton, in the district of Louhans, with a population of 1694 individuals. The canton itself contains 10 communes and 9760 inhabitants, upon a territorial extent of 150 kilometres.

Culzy, a small town of France, in the department of Saone and Loire, with 1301 inhabitants, 18 miles S. of Chalons. It is the chief place of a canton, which reckons a population of 8816 individuals, in eleven communes, upon a territorial extent of 1224 kilometres in the district of Louhans.

Cul de Chandon, fr. the rounded bottom of the funnel, or the excavation of a mine after it has produced its effect.

Cul de Cobe, in Geography, a bay of the island of Martinique, on the N. part of the Cul de Sac Royal.

Cul de four, a fort of low, spherical vault, oven-like. Coul de four d une niche, denotes the arched roof of a niche in a circular plan. See Mem. Acad. Scienc. an. 1719, p. 303.

Cul de lamp, a French term, properly signifying the bottom of a lamp. It is applied in architecture to several decorations, both of masonry and joinery, used in vaults and ceilings, to finish the bottom of windows, and wreathed somewhat in manner of a trilé; particularly a kind of pendentive in Gothic vaults.

Cul de Sac, in Geography, a general term for a bay in the West India islands.

Cul de Sac des Anglais, a bay of the island of Martinique, on the S.E. coast, a little to the south of Cape Ferrar.

Cul de Sac des Francais, a bay of the island of Martinico. N. lat. 14° 34'. W. long. 60° 53'.

Cul de Sac, Grand, a bay in the W. coast of the island of St. Lucia.—Alfo, a bay on the N. coast of the island of Guadaloupe. N. lat. 16° 30'. W. long. 62° 53'.

Cul de Sac Marin, a bay on the S. coast of the island of Martinico. N. lat. 14° 31'. W. long. 64° 45'.

Cul de Sac, Petit, a bay of Guadaloupe, 7 miles S. of Grand Cul de Sac.

Cul de Sac, Robert, a bay of the island of Martinico, on the east coast. N. lat. 14° 34'. W. long. 60° 59'.

Cul de Sac, Royal, a bay on the W. coast of the island of Martinico. N. lat. 14° 30'. W. long. 60° 59'.

Cul de Sac, Vache, a bay of the island of Martinico. N. lat. 14° 34'. W. long. 60° 57'.

Culmant, a small town of France, in the department of the Cher 15 miles E. of Châtres, and 12 miles S.W. of St. Amand.

Cularo, in Ancient Geography, a town of Gallia Narbonensis, which separated the Allobroges from the Voscanians. It was rebuilt by Gratian, and called Gratianopolis: now Grenoble.

Culate, is the part beyond the vent, or inner mould of a piece of ordnance, and which terminates in a large knob or button of metal.

Cul-Blanc, in Ornithology, a name given by Buffon to the Motacilla Genua, in the Midwifery, a supposed evolution of the fetus in the womb, occurring about the end of the seventh month of pregnancy. See Birin; also Foetus, position of, in the womb.

Culbute, in Midwifery, a supposed evolution of the fetus in the womb, occurring about the end of the seventh month of pregnancy. See Birin; also Foetus, position of, in the womb.

Culcasia, in Botany, a name given by some of the old writers to an Egyptian plant growing near the sea-shore. It is by many supposed to have been the lycopsis, but improperly. The resemblance of the name was the only thing that gave the idea of its being this plant; but the virtues attributed to it, and the uses it was put to in the common affairs of life, shewed that it was the kali or cali, the plant of whose ashes they made a salt useful in many arts, and fill the basins of the glass and soap manufacturers, and called by Avicenna asher.

Culte, Lat. Beds which, of some kind or other, have been in use from the highest antiquity. They were fir of herbs or grass, then of feathers, and afterwards of wool. (See Bed.) In proportion as the Romans departed from the severity of their original mode of living, they wished to have beds with them when embossed as soldiers and on actual service, in spite of prohibitions to the contrary. Scipio Africanus Numantius observing the prohibitions to be useless, let himself an example of submision and self-denial, by forbidding a bed to be prepared for him, and reposing on a bundle of hay only. When a general such as Scipio gave so fine an example of self-denial, even the stoutest and most effeminate must have accustomed themselves to the ground. It does not from thence follow, however, that the commander of an army should sleep on the bare ground. It is sufficient that he has once let the example. For he in general stands more in need of rest than any other man, as his sleep is sometimes frequently interrupted during the night; and his spirits, exhausted by the fatigues of watching, require to be recruited, to enable him to resume his labours and attend to the duties of next morning.

Cultanus, in Ancient Geography, an episcopal see of Proconfulinus Africa.—Alfo, a lie in the Byzacene territory.

Culca, a Roman colony of Africa, placed by Ptolemy in Numidia.

Culcui, a fort of grain brought from Egypt to Constantiopolis, where it is much efficacmed, especially when fresh. Authors are not agreed what plant it is produced from.

Culdees, or Culdees, in Church History, a designation given to the monks, or priesls, in Scotland, in the first ages of Christianity, whence the term passed into Ireland.
They were called _culdees_, quasi _cultores dei_, from their
great piety and devotion. Others, however, derive their
name from the kils or cells in which they lived. This
monastic order commenced, both in Scotland and Ireland,
about the middle of the 6th century; and St. Columba is
acknowledged to be its founder. This eminent person,
distinguished by a greater degree of useful knowledge and ra-
tional piety, than those which generally prevailed at that
erly period, arrived from Ireland and succeeded Palladius, at
a considerable interval after his departure or death; and soon
obtained such an ascendency both over princes and people,
that he became a kind of dictator among the Scots and
Picts, in civil as well as religious matters, for more than 50
years. Having obtained a grant of the small island Hu*,
Hu, or Iona, one of the Ebrudes or Hebrides, he there
built a monastery, which was long considered as the mother
and queen of all the monasteries in Scotland; and its
abbot, though only prebendaries, were respected as the chief
ecclesiastical persons among the Scots, out of regard to its
founder St. Columba, who, as Bede informs us, was a pre-
byter, and not a bishop. In this monastery many excellent
persons received their education, and were sent from thence,
not only to instruct the Scots and Picts, but even to con-
vert the Saxons. These missionaries were of a kind of pre-
byters, who lived in small locities, and travelled over the
neighbouring countries, preaching and administering the fa-
craments. To each of their cells there was one who had
some kind of superintendency over the cell, managed their
affairs, and directed their missions; but whether or not he
enjoyed the title and authority of a bishop in this period,
is not certainly known. The council of Ceal-hythe, held
A.D. 816, decreed, that no Scotch priest should be al-
lowed to perform any duty of his function in England; and
it therefore seems to have suspected that they had no
bishop; for, indeed, the chief reasons assigned by that coun-
cil for refusing to keep communion with those Scots Cul-
dees were, that they had no metropolitans amongst them;
that they paid little regard to other orders; and that the
council did not know by whom they were ordained, i. e.,
whether they were ordained by bishops or not. (Spelmi.
Concil. i. p. 325.) The rectors or bishops of the sever-
al cells of Culdees were both chosen and ordained, or
consecrated, by the members of those societies; and this
was probably the ground of the dissatisfaction expressed by
the council of Ceal-hythe. When the cells or monasteries
of Scotland came to be enlarged, better built, and better
endowed, they were long after this period by these Cul-
dees, or secular clergy, who had the privilege of choosing
the bishops in those places where fees of bishops were esta-
blished. (Both. Hist. Scot. i. 19.)

Few writers have done justice to the Culdees. They
seem to have been too much attached to simple truth and
pure Chriftianity, to find favour with those who aimed at
wealth and power, and enjoyed the benefit of human impos-
tions and prevailing ignorance. Even Bede, venerable as
he was, though he beflows upon them great and just com-
mandation, cannot avoid calling some蠢ure upon them;
and seems to have regarded them as felons, in the
word feke of that word. "They followed," says this an-
cient writer, "uncertain rules in the obervation of the
great feftival; only practifing fuch works of charity and
piety as they could learn from the prophetic, evangelical,
and apocryphal writings;" thus infeminating some reflection
both on Columba and his successors. Ledwich, in his
_Antiquities of Ireland," pronounces upon them an high
eulogium. "It is true," says he, "they did not adopt the
corruptions of the Anglo-Saxon church, or the super-

fitions which had contaminated Chriftianity for centuries.
They preferred their countrymen from the balphul conta-
tion, and at length fell a facrifice in defence of their an-
cient faith. Superfition found them her most determined
facs. The Culdees continued, until a new race of monks
 arose, as inferior to them in learning and piety, as they fur-
passed them in wealth and ceremonies, by which they cap-
tivated the eyes, and infatuated the minds of men. The
conduct of the Romanists towards them was in every place
uniformly perfeoting. The Romish emigrants were obliged
to exert all their cunning to remove the prejudices in their
favour, and where force could not, seduction often pre-
valent: at last they loft all their privileges, their old in-
titutions, and retained barely the name of their prifine cele-
brity." The overthrow of the Culdean worship was finally
effected by pope Adrian, A.D. 1155, when he claimed the
sovereignty of these islands, and, in the plenteous of his
presumption, bellowed Ireland on Henry II. Mr. Led-
wich informs us, that in Mondhinda, an island of Ireland,
in the country of Tipperary, flood a Culdeen abbey and
church, where several of the order resided; and it appears
that, in 1155, they "had not conformed to the reigning
superfition; they devoutly ferved God," says this histo-
rian, "in this wild and dreary retreat, sacrificing all the
flattering prospects of the world for their ancient doctrine
and discipline."

CUL'E D'UN FONT, Fr. the arch of a bridge next to the
landing. The phrase is also used by some writers to
denote the buttment of masonry which supports that arch.

CULEMBACH, in Geography, a district or marquisate
of the circle of Franconia, in Germany; bounded on the
W. by the bispohrie of Bamberg; on the S. by the territory
of Nuremberg; on the E. by the palatinate of Bavaria and
Bohemia; and on the N. by Voegland and part of the
circle of Upper Saxony. It is about 50 miles long,
from N. to S., and 30 broad from E. to W. It abounds
with forests and high mountains; the most considerable of
the latter are those of Fichtelberg, which are covered with
pines. From these mountains spring four large rivers, viz.,
the Maine, the Saha, the Eger, and the Nago. See
BAREITH.

CULEMBACH, a town of Germany, the capital of the
above-described marquisate. It is well fortified, and is sit-
uated at the confluence of two branches of the river Maine.
It was pilled and burnt by the Hussites in 1450, and by
the inhabitants of Nuremberg in 1575. N. lat. 50° 15',
E. long. 11° 28'. See BAREITH.

CULEMBOURG, a town of the United States, in Guel-
derland, situated on the S. side of the Leck. The lords of
Culemborg were very powerful in the year 1150. In the
year 1555 it was erected into a comte by Charles V. in fa-
vour of Florent de Pallant, one of the confederate nobles,
who prefiged the remonstrance against the inquisition,
in favour of liberty of conscience, to the duchess of Parma,
April 5, 1566. During the succeeding troubles, he retired
to Culemborg, where he lived pescially, and died in the
year 1592. As he died without children, the comte de-
tended to the comte de Waldeck, who had married the
heirs by a collateral line; 27 miles miles S.S.E. of Am-
terdam, and 16 N. of Boit-le Duc.

CULERA, Cape, a cape of Spain. on the coast of Va-
lenia. N. lat. 39° S. Long. 16° 28' E. of the Peck of
Tenerife.

CULEVRAS, Cape, a cape of America, on the N.
coast of the island of Darien. N. lat. 9° 36'. W. long.
75° 2'.

CULEUS, the name of a measure of liquids, the greatest of
of all the measures among the Romans; it contained twenty amphorae. Columella reckons the culexus of wine, at the vineyard, to be worth three hundred nummi, or seventy-five denarii, that is, according to the English rate, a hundred and forty gallons, three pints and a half, for two pounds eight shillings, and fivepence farthing, which is about a halfpenny the pint. Columela, lib. iii. cap. 3.

The culexus is by others described to contain 160 coni, or 960 sextarii. We read of *dolla coloraria,* and *sulpitum coloraria,* the latter of which must have been very large, being about 35 hogheads, and therefore larger than our pipes.

The word culexus is used also by some Roman authors for a leather sack.

**Culex** (Linn., *Euteneology,* a genus of the dipterous order. The mouth is furnished with a single-valved exserted flexible siphon inclosing five bristles; feelers of two or three joints; antenna approximate and filiform.

These insects are of the gnat tribe, and fubilid on the blood and juiccs of larger animals, which they suck by means of their proboscis. In the larva stage they live in flagrant waters; they have a small cylindrical respiratory tube near the tail, and the head armed with hooks by means of which they seize upon and secure their prey. The pupa is incrusted and subividate with respiratory tubes near the head. The genus contains many species not described by authors.

Species.

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**Pipiens.** Cinereous with eight brown rings. Linn. Fn. Suec. &c.

Inhabits Europe and the greater part of Asia and America, about watery places, and is every where known by its shrill buzzing noise, and fever purette. It appears in immense numbers in England during their summer. This is the common gnat of our country. The antennae of the male are stigmatized.

According to Kalm the Mifquetses are a variety of this insect.

**Anaualus.** Brown; abdomen and legs annulated with white; wings spotted with brown. Fabr.

Found in Europe, chiefly in Germany and Denmark. It is the same size as the former; the proboscis is half the length of the body; segments of the abdomen edged with white, and the fifth segment marked with a white dorsal line.

**Triturus.** Brown, with pale lines on the thorax.

Resembles swarms and marshes of Europe.

**Ciliata.** Brown-tealaceous; wings fringed. Gmel.

A rare species found in Europe; its size is half that of the common gnat; the antennae black with vertical hair; abdomen brownish.

**Cuteccens.** Yellow; wings hyaline; rib yellowish. Fabr.

Found in marshes in Denmark.

**Hemorrhoidalis.** Brown; abdominal margin fringed with rufous hairs. Fabr.

The largest of the gnat tribe. The species is a native of Cayenne. The antennae are black with thick vertical hairs, the first joint naked, and of a shining blue colour; head brown, with the crown shining blue; legs blue, thighs tealaceous beneath; wings white, with a brown rib.

**Ciliutus.** Black, with two yellow dorsal lines on the thorax; legs yellow. Fabr.

Smaller than the last, and inhabits Carolina.

**Pulicaris.** Brown; wings white with three dully spots. Linn.

Inhabits Europe and America.

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**Reptans.** Black with hyaline wings; legs black with a white ring. Linn.

Very abundant in the north of Europe, and is extremely troublesome.

**Morio.** Black, with white wings; hind-thighs clavate and ferricated. Fabr.

A species found in England; the antennae are bett with tufted hairs; and the anterior thighs are pale at the base.

**Equus.** Black; abdomen brown; front white.

Linn.

Inhabits Europe, and is often found secreted among the hairs of horses.

**Stercorus.** Tealaceous; wings reticulated; line on the thorax, and three on the abdomen blackish.

Native of Europe; frequent on the dung of quadrupeds.

**Varieglatus.** Cinereous; legs varied, black and white. Schrank.

Found in Austria. Head and poisons black; wings fringed.

**Argenticus.** Back covered with silver scales. Poirier.

Described in *Journ. de Physique* as a native of Barbary, which country it infests in great abundance.

**Culicicani, in Geography, a province of Mexico, in the domain of New Biscay, lying on the gulf of California, and bounded on the N. by Cisalna, on the E. by New Biscay, on the S. by the Pacific Ocean, and on the W. by the afore-mentioned gulf, or Vermillion sea; about 240 miles long, and 200 broad. The soil is fertile, and the air salubrious. It has some silver mines. The chief towns are Culacan, Patakan, and St. Miguel.

**Culicagi, the capital of the above-mentioned province, situated on a rivulet which runs into the river Uayma, called also the river of Culacan; 481 miles N.W. of Mexico. N. lat. 24° 32'. W. long. 106° 23'.

**Culinary,** an epithet frequently added to *fire,* determining it to be a common fire, excited in wood, coals, or other ordinary fuel; in contradistinction to solar fire, or that raised by the action of a burning glass; also to central fire; to animal fire, &c.

The word is formed from the Latin *culina,* kitchen; this being the chief place of such fires. See *Fire.*

**Culinary Plants, in Gardening,* all such plants as are made use of in the art of cookery, as articles of food, or for the purpose of garnishing and ornamenting various kinds of dishes.

**Cull,** anciently *Cella Magna,* or *Cullus,* in Geography, a poor sea-port town of Africa, situated at the bottom of the gulf of Stora, in the eastern province of Algiers, with a tolerable port, into which flows the river Zamamid. The French African company has a small factory in this place, where they purchase, as they do at Bona, corn, oil, leather, wax, and wool, and constantly keep a resident agent, who has charge of the correspondence between Bona, Algiers, La Calle, and Marseillels. N. lat. 36° 50'. E. long. 6° 40'.

**Cullen, William,* in Biography, an eminent practitioner, and teacher of medicine, was born at Lanerc, in Scotland, in the year 1712. His parents, who were respectable, but not wealthy, after giving him the usual school education of the country, put him apprentice to a surgeon and apothecary at Glasgow. At the conclusion of the term of his apprenticeship, he was engaged as surgeon to a vessel trading to the West Indies, in which he made several voyages. Quitting at length this situation, he settled as surgeon and apothecary at a village in the parish of Shotts, whence, after a short stay, he removed.
C U L L E N.

removed to Hamilton. He here formed a connexion with Mr., afterwards Dr. William Hunter. As they had not sufficient busines to employ the whole of their time, with a view of turning their leisure to advantage, and of improving themselves in their profession, they agreed, each of them in their turn, to pass a winter at some university. Mr. Cullen went the first winter to Edinburgh, and entered himself as pupil in the several classes. That he attended diligently to his studies while here was manifest, by his being soon after able to commence teacher. The following winter Mr. Hunter came to London, and entering into the service of Dr. William Douglas, as assistant in his dissecting room, he soon made himself so useful as to induce the Dr. to offer him a share in his lectures, an offer too advantageous to be rejected by the young adventurer; though by this means the partnership engagement between Mr. Cullen and Dr. Hunte was dissolved, it made no breach in their friendship. They continued to correspond with each other during the remainder of their lives. Cullen, while he remained at Hamilton, had the good fortune to be introduced to the duke of Argyle, while on a visit in the neighbourhood, and to assist him in some chemical pursuits. But a more fortunate circumstance was his being sent for to the duke of Hamilton, who was suddenly seized with a complaint, sufficiently violent to alarm his family for his safety. The method adopted by Cullen was so judicious as to give relief to his noble patient, and to gain him the entire approbation of Dr. Clarke, who lived at some miles distance, and had also been sent for. About the same time he married Miss Johnston, the daughter of a neighbouring clergyman, by whom he had several children. In the year 1756, he took the degree of doctor in medicine, and was appointed teacher of chemistry in the university of Glasgow, to which place he had removed a few months before. He had now an opportunity of displaying his talents, which in a particular manner fitted him for the office of a teacher. His method of arrangement, his distinctness of enunciation, his vivacity of manner, and his knowledge of the science he taught, made his lectures peculiarly interesting to his pupils. In the mean while his reputation, as a practising physician, kept pace with his fame as a teacher, so that there were few cafes of difficulty in which he was not consulted. In 1751 he was appointed professor in medicine to the university; and in 1756, on the death of Dr. Plummer, chemical professor at Edinburgh, he was invited to accept that chair. This offer was too advantageous to be refused. Quitting, therefore, his engagements at Glasgow, he went to Edinburgh, and in October of the same year, commenced his lectures. He soon became as great a favourite there as he had been at Glasgow, and found his course attended by a greater number of pupils than any of the other professors, excepting the teacher of anatomy. For this he was indebted not only to the great attention he paid to the buffets, and his complete knowledge of the subject, but to his address, in managing his pupils, whom he treated with kindnefs and familiarity, inviting them to his house, allowing them the use of his library, and readily giving his advice and assistance in all their difficulties. Some share of his popularity may also be attributed to the novelty of his opinions, or to a new theory on the causes of diseases, which he occasionally introduced into his lectures. Dr. Allton, lecturer on the Materia Medica, dying in the year 1766, Dr. Cullen was appointed to fill his place; the duties of which he continued to perform until the year 1768, when, in conjunction with Dr. Grego, he was appointed lecturer on the practice of medicine in the place of Dr. Rutherford. He now resigned the chair of chemistry to Dr. Black, who had been his pupil, and who in that line more than rivalled his teacher. The year following, Dr. Cullen took the follo-
cation with the parks and woods is formed by a handsome stone-bridge over the burn, the single arch of which is 64 feet high, and 84 in width; the nature of the surface of this domain produces the richest description of landscape; and the view from the house commands a fine circuit of country to the fourth; nor is that to the north, including the frith of Moray, less beautiful. The antiquities of this parish are confined to the ruins of a castle situated on an eminence close to the sea, near the town of Cullen, and those of a house where Elizabeth, queen of king Robert Bruce, is said to have died. The farms of the district are generally small, inclosed, and in a state of high cultivation, and the population amounted to 1718 in 1791. Sinclair's Statistical Account of Scotland.

Cullen, a fair town of the county of Tippary, Ireland; at a bog near which was found a golden crown, weighing six ounces, and many other ancient curiosities, of which an account is given in the Philosophical Survey of the South of Ireland.

Cullage, or Cullage, a right usurped by the ancient lords, and established by a shameful custom, which gave them the first night with their valets' brides.

The word is formed from the French *col*, *poids*, the weight. It is said this right was established by Evenuus III. king of Scotland, and finally abolished by Malcolm III. A compensation being settled in its stead; as occasioning frequent revolts of the valets against their lords. See Mar-chesa.

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Cullion, in Botany. See Orchis.

Culloden, in Geography, a heath of Scotland, in the county of Inverness, about nine miles distant from Inverness, surrounded with hills, except on the side that lies open to the sea, and celebrated by the victory obtained in April 1746, on the part of the duke of Cumberland, over Charles Stuart, the Pretender, which completely terminated the hopes of this family and its friends. In less than half an hour after the commencement of the action, the rebels were totally routed. The French pikemen, after covering the retreat of the highlanders, retired to Inverness, and surrendered themselves prisoners of war. An entire body of the rebels marched off the field in order, with their pipes playing, and the Pretender's standard displayed; the rest were defeated with great slaughter, and the field was covered with the dead and wounded. The road, as far as Inverness, was trodden with the bodies of the slain. Twelve hundred, or as some say, 3,200 rebels were slain or wounded in the field and in the pursuit. The Earl of Kilmarnock was taken, and in a few days lord Balmerino surrendered; and was conveyed, with other leaders of the rebellion, by sea to London, there to await their fate. The glory of this victory, in which the duke of Cumberland acquired great honour by his skill and valour as a commander, was unhappily fulfilled by the barbarity of the soldiery, who thrilled for revenge. It is said, they traversed the field of battle, and maimed those miserable wretches who lay maimed and expiring. The vanquished adventurer rode off the field accompanied by a few horsemen; and having conferred with the old lord Lovat, disfigured his followers, and wandered about, a wretched and solitary fugitive, among the ills and mountains, for about four months, enduring such a variety of hardships and sufferings, as no other person ever survived. In less than an hour, his hope wholly vanished, and the rebellion was completely extinguished. When the news of this battle arrived in England, the nation was transported with joy, and extolled the duke of Cumberland as a hero and deliverer. Both houses of parliament congratulated his majesty on the auspicious event. They decreed, in the most solemn manner, their public thanks to his royal highness, which were transmitted to him by the respective speakers; and the commons, by bill, added 2,500l. per annum to his former revenue.

Culliton. See Culliton.

Culloor, a town of Hindoostan, in the country of Golconda; 15 miles W. of Rajamanick, and 100 E. of Hyderabad.

Cullenmont, or Cullompton, a town of England, in the county of Devon, with a weekly market on Saturday. Here are manufactures of fungithes, serges, and other woolen goods; 11 miles N. of Exeter, and 159 W. of London.

Cully, or Culli, a small but handsome town of Switzerland, in the canton of Berne, diocese of Lausanne, and high situated on the banks of the Leman, or lake of Geneva, and remarkable for its excellent wine, which is reckoned one of the best of the famous wines of La Flon. From an inscription which has been found here, in honour of Bacchus, with the epithet *Libero Patria Cultivator*, this town is supposed to be very ancient. In 1440 Louis de la Palu, bishop of Lausanne, gave the inhabitants leave to enclose it within walls, and to surround it with ditches.

Culm, in Botany. See Culmus.

Culum, in Agriculture, is a term sometimes applied to the haum, trunk, or draw of such plants of the grass kinds as elevate their leaves, flowers, and fruits according to the definition of Linnaeus; and in which the trunks or stems are tubular or hollow; having in many cases knots or joints distributed at suitable lengths or distances throughout their whole extent; the leaves being long, sleek, and situated either near the roots in large numbers, or proceeding singly from the different joints of the flalk, which they embrace at the base, like a sheath or glove. The haum is most commonly garnished with leaves; sometimes, however, it is naked, or devoid of leaves, as in a few species of cypresgraffes. Most graffes have a round cylindrical flalk or item, but in some species of cypresgraffes, and others, it is triangular. The flalk is sometimes entire; that is, has no branches; sometimes branching, as in the *sibianus caudatus* and *caryota*; and not seldom composed of a number of flakes, which lie over each other like tiles. And lastly, in a few graffes the flalk is not intermixed with joints, as is the case in the greater part of them. The space contained between every two knots or joints is termed by botanical writers *intercalium* and *articulam culmi*. This sort of trunk often affords certain marks of distinction in discriminating the species of the plants. Thus, in some kinds the species are scarcely to be distinguished, except by the angles of the *culmis* or flalks. These, in some of the species are met with to the number of five, in others to six, and in others to still more, as ten.

Culum, or Culm, in Geography, a town of the grand duchy of Warfaw, which, since the peace of Tilsit in 1807, belongs to the kingdom of Saxony, and formerly belonged to Prussia, was built in 1239, on an eminence near the banks of the Vihula, 90 miles S. of Danzig. It was besieged by one of the ancient dukes of Mazovia to the knights of the Teutonic order. The inhabitants afterwards withdrew themselves from the dominion of the latter, and submitted to Poland. While the Teutonic knights had the sovereignty of Culum, the high tribunal of Prussia was held in this city. Hence the law of Culum was in such reputation that there were few places in Prussia where it was not received.

Culm is a large city, but thinly inhabited. It was an ancient city, and is now the seat of a bishop of the Roman Catholic church.
CUL

CULM, in Mineralogy, a variety, according to Kirwan, of the native mineral carbon, but less pure, differing from it chiefly in being more brittle, and emitting, when ignited, a disagreeable fume. Its colour is black; its fire from three to four; not easily kindled, but when ignited burns a long time without flame or smoke, does not cake, and leaves but little ashes. The specific gravity is 1.396. It seems to be the glanz-kohle of Werner. It is found in Wales. See Coal-balls.

CULMAIN, in Geography, a town of Germany, in the circle of Bavaria, and Upper Palatinate; 14 miles E. of Bavreuth.

CULMBACH, or Culembach, Hans Von, in Biography, a painter, and an engraver on copper and on wood. He is said to have been a disciple of Jacob Walsch, and afterwards to have received instructions from Albert Durer. He died in 1545.

This artist marked his plates with J. C. or H. v. C. We shall only notice the following, which are in a dry, stiff manner:


CULMACH, in Geography, a town of Germany, in the circle of Franconia, in the margravate of Bayreuth, which, till the year 1806, belonged to Prussia. It was anciently the principal town of the margravate, which went likewise by the same name. The town is seated on the river May, near the old castle of Pfalzborough, 27 miles S.E. of Cobourg, and 30 N.E. of Bamberg. E. long. 11° 28'. N. lat. 50° 17'.

CULMIFEROUS Plants, in Agriculture, are all such as have smooth jointed or knotted stems, and in which the seeds are enveloped or wrapped up in a sort of chaffy husks or coverings. All the grains, and most of the grasses, as well as many other plants, are of this kind.

CULMINATING POINT, in Magnetism. See MAGNET.

Hence, a star is said to culminate, when it passes the meridian.

To find the culmination of a star, or the line wherein it passes the meridian. On a meridian line A B (Plate V. Astronomzy, fig. 43.) stretch a thread, DC, perpendicularly; and from D to E, another DE, cutting the meridian obliquely, at any angle: the triangular thread, DCE, will cut the plane of the horizon in the meridian line, or at right angles; and consequently will be in the plane of the meridian.

The eye, therefore, being so placed, as that the thread DE may cover the thread DC; wait till the star be bisected by the triangle DCE; for then the eye and the star will, together with the triangle DCE, be in the same plane; consequently the star is in the meridian.

To find the culmination of a star by the globe, see GLOBE.

There are a few days when one or more stars do not come to the meridian with the sun, and then they have the fame right ascension with him:—also, at some time of the year, the sun must have the same right ascension which any proposed star has; though at other times he may have a left, and so precedes, or comes to the meridian before that star; or a greater, and so follows that star, and comes to the meridian later. Hence is derived the following method of finding the culmination of the stars. Rule. Subtract the sun's right ascension for the proposed day, from the right ascension of the given star; the difference will be the time of the star's culmination, nearly. Then say, as 23° is to the daily change of the sun's right ascension; so is the time of culminating, nearly, to a fourth number, which, being subtracted from the time of culminating, nearly, will give the true time of the star's culmination. If this time be less than 12° it happens in the afternoon; but if more than 12°, the excess above 12° will shew the time next morning. N.B. 24° must be added to the star's right ascension, if the sun's right ascension be greater.

If the time of the star's culmination be wanted for any other meridian besides that of Greenwich, or London, add the longitude in time to the time of culmination nearly, if the longitude be well, or take their difference if it be evil, and use that sum or difference instead of the time of culmination nearly; observing only in the latter case, that if the longitude in time be greater than the time of culmination nearly, the minutes and seconds resulting from the proportion must be added to the time of culmination nearly, instead of being subtracted from it.

To find the time of the culmination of the moon, or any planet. Mr. Keith has given the following rule in his "Trigonometry," b. iii. c. 2. Take the difference between the sun's and planet's motion in right ascension in 24 hours, if the planet be progressive, or their sum, if retrograde. Then, as 24 hours diminished by this sum or difference, when the planet's motion is greater than the sun's, or increased by it when the sun's apparent motion is greater, is to 24 hours; so is the planet's right ascension at noon, diminished by the sun's, to the time of its transit. Note. If the sun's right ascension be greater than the planet's, 24 hours must be added to the planet's right ascension before you subtract.

CULMITE, or Cullmese, a small town of Saxony, in the circle of Neustadt, remarkable for a rich quarry of slate in its neighbourhood.

CULMORE, or Culmore, See LONDONDERRY.

CULMSEE, or Culmsee, a small town of the grand duchy of Warfaw, which, since the peace of Tilsit, belongs to the kingdom of Saxony. It was built in 1251, and contains the cathedral church of the bishopric of Culm.

CULMUS, in Botany, a Culm or Straw, is the peculiar stem
CUL

It is the nature of this kind of item to be better understood than defined. It is almost always cylindrical, rarely triangular, never square. It is softly simple, rarely branched; generally consisting of several joints or knots, but sometimes, as in rushes, unbroken. For the most part it is hollow, and lined with a fine brilliantly white film; sometimes it is filled with pitch. Its cuticle is hard, and contains fibrous earth. This sort of item is not found in any dicotyledous plant, but only in such as have either one cotyledon, or none at all. S.

CULPABILSIS. See Non 6t culpabis.

CULPEUS CaRB, &c. in Zoology, the Arctic fox, or Canis Vulpes Lagopus; which see.

CULPEPER, Nicholas, in Biography, student, as he calls himself, in physic and alchemy, was the son of a clergyman, by whom he was wont, after receiving a preparatory education, to the university of Cambridge. There making but a short stay, he was put apprentice to an apothecary, under whom he appears to have acquired a competent knowledge of the Materia Medica, and of the method of preparing and compounding medicines. On completing the term of his apprenticeship, he came to London, and settled in Spital Fields. This was about the year 1654. By the whole tenor of his writings we find he joined, or, at least, favoured the Puritans, and those who were engaged in those unhappy times in overturning the constitution of the country. But his warfare was with the college of physicians, whom he accused of craft and ignorance. Like the popish clergy, he says, they endeavoured to keep the people in ignorance of what might be useful either in preserving or relieving health. To counteract their endeavours, he published, in 1649, a translation of the "Dispensary of the College of Physicians," in small 12mo., adding to the account of each drug and preparation a list of their supposed virtues, and of the complaints in which they were usually given. He also published an Herbal, which has passed through several editions, and is still in repute as a sort of family guide. He tells you in this book under what plant the plants are to be gathered, which he thinks essential in preserving their virtues. He intended, he says, treating of the diseases incidental to men, at the different periods of their lives, and as a beginning, gave a directory to midwives, treating in it of the method of infusing a healthy progeny, and then of the management of new-born children. Though this book is of very small value, it passed through many editions. He died at his house in Spital Fields in 1654.

CULPEPPER, in Geography, a county of Virginia, in America, between the Blue Ridge and the Tye-Waters, which contains, by the census of 1800, 8,700 inhabitants, of whom 7,748 are slaves. The court-house of this county is 45 miles from Frederickburg, and 95 from Charlottesville.

CUL-PRIT, in Law, a term used by the clerk of the assise, or clerk of the arraigns, on behalf of the crown, when a person is indicted for a criminal matter.

After the indictment is read in court (which is the crown's charge against the prisoner at the bar), he is asked if guilty, or not guilty? If he answers not guilty, there is next a replication from the crown, by continuing the charge of guilt upon him; which is expressed by pronouncing the word cul-prit; cul by an abbreviation of the Latin word culpa, guilt, or culpabilis, guilty, and prit (now prit) the old French word for ready; or, as others rather think, the Latin apparet, appears: or rather, qu'il prit, let it appear to, i.e. not guilty.

From the formula, therefore, of the clerk of the arraignment, the prisoner is deemed guilty of the crime charged on him; and that the crown is ready to prove it upon him: this finale of the term prit being deduced from the year-books, and other ancient repositories of law.

That this is the true explanation of the term, seems evident from the form of the entry of the record of the trial, when drawn at large.

By this replication, the king and the prisoner are at issue. How our courts, says judge Blackstone, came to express a matter of this importance in so odd and obscure a manner, "ren tantum tan negligenter," can hardly be pronounced with certainty. It may, perhaps, however, be accounted for by supposing, that these were at first short notes, to help the memory of the clerk, and remind him what he was to reply; or else it was the short method of taking down in court, upon the minutes, the replication and averment; "cul-prit," which afterwards the ignorance of succeeding clerks adopted for the very words to be by them spoken. But, however it may have arisen, the joining of issue, (which, though now usually entered on the record, is no otherwise joined in any part of the proceedings) seems to clearly the meaning of this obscure expression; which has puzzled our modish eumologists, and is commonly understood as if the clerk of the arraignment, immediately on plea pleaded, had fixed an opprobrious name on the prisoner, by asking him, "cul-prit, how wilt thou be tried?" for, immediately upon issue joined, it is inquired of the prisoner, by what trial he will make his innocence appear. This form has, at present, reference to appeals and appointments only, wherein the appellee has his choice either to try the accusation by battel or by jury. But upon indictments of a more serious kind, there can be no other trial but by jury, per pais, or by the country; and, therefore, if the prisoner refuses to put himself upon the inquisition of the usual form, that is, to answer that he will be tried by God and the country, if a commoner; and if a peer, by God and his peers; the indictment, if in treason, is taken pro confesso; and the prisoner, in cases of felony, is adjudged to stand mute, and if he perseveres in his obstinacy, shall now be convicted of the felony. Stat. 16 Geo. III. c. 20. When the prisoner has thus put himself upon his trial, the clerk answers in the humane language of the law, which always hopes that the party's innocence, rather than his guilt, may appear, "God lend thee a good deliverance."

CULROSS, in Geography, a royal borough and ferry-port, in the county of Perth, Scotland, is situated on the north shore of the Firth of Forth, whence it appears to great advantage, elevated on an abrupt ascent. The town consists of two streets, intersecting each other at right angles. It received its charter from James VI. in 1558, and is full of possession of all the original privileges granted by that royal act. James IV. and Charles II. granted the inhabitants the exclusive privilege of making girdles of iron, an useful used in Scotland for baking unleavened bread, but the girdles sold at Carron having superseded them, the town has evidently declined; nor has its hitherto considerable trade in coal and coals been more successful lately than was an attempt to extract tar, naphtha, and volatile oil, from peat, commenced by the earl of Dunonald, who expended large sums in erecting works for this purpose at Culross. The harbour is perfectly safe; but several small rocks obstruct the entrance, and thus prevent the admission of ships of considerable burden, though the spring tides rise about sixteen feet.
CUL

The parish of Culrofs is nearly four miles square; and, except the sudden ascent from the shore, may be pronounced slight. The south portion of the soil is in a state of excellent cultivation; but the north is little more than a vast marsh, insensible of no other improvement than planting. Part of the district abounds with iron ores and ironstone, freestone of superior quality, and coal: and at Kincardine, four miles from Culros, fish are caught to the amount of 1000 l. per annum, by cruses, an invention calculated to facilitate the labours of the fisherman. The monastery of Culros, situated above the town, was founded by Malcolm, thane of Fife, in 1217, who dedicated it to the Virgin Mary and St. Servanus, and endowed it for an abbott and nine monks of the Cistercian order. Near the ancient abbey church is the magnificent seat of Culros, erected about 1590, by Edward lord Kinloch, and now the property of the earl of Dundonald; besides which, the parish contains an elegant mansion, named Valley-field, the residence of Mr. Charles Prefton, and the vestiges of two Danish camps.

The population was 1442 in 1792.

CULFESSION, a term which some authors use for the measuring of heights and distances by piece-meal; that is, by instruments which give us such heights and distances by parts, and not all at one operation.

CUTLATION, in Agriculture, the art of tilling, preparing, and improving the soil by means of labour and manure, or other similar methods, so as to render it in a fit condition for affording plentiful crops, of different kinds, at suitable periods, according to the nature of the climate, situation, and other circumstances in which it is placed. It is the art of bringing land into such a state of texture and condition, as that the roots of cultivated vegetables may be permitted to spread and extend themselves in the most proper manner for deriving their nourishment from it; and that water and other matters necessary for the perfect growth, vegetation, and support of such plants as crops, may be contained and preserved in it in the most favourable manner for these purposes.

This is a business of course, which consists of different divisions or distinctions, in respect to its nature, as,

1. Tillage, in all its different branches.
2. Manuring, or the application of composts, and other substanacies.
3. Weeding, or the removal of all sorts of noxious plants.
4. Managing grass-plants, or grass husbandry.

The proper management, in regard to all these, and some other circumstances, constitute what may be termed cultivation, or field husbandry. See TILLAGE and HUSBANDRY.

CUTLATOR, a term given to an implement, something of the horsehoe kind, invented for the more convenient and easy ploughing of the earth or mould. (See Horsehoe, Drag, Extirpator, &c.) The implements of this kind, which are employed in agriculture, are constructed in very different ways, according to the nature and circumstances of the land, and the particular crops and stitches for which they are designed. In Plate X. on Agriculture, fig. 1, there is the representation of one, which is made upon a very simple plan, and which is recommended by the writer of the Agricultural Survey of the County of Nottingham. The dimensions of which are these: from a to b, the length of the first bull, 4 feet 6 inches. From c to d, the length of the second bull, 3 feet 9 inches. From a to c 16 inches; the teeth 2 feet long, and bent near the bottom, for the share part to lie flat on the earth, and placed one foot from each other. From d to f, the length of the beam is 6 feet. From g to h, the length of the iron axe-tree for the small wheels, 1 foot 6 inches. From i to l, the length of the iron that shifts through the beam, and fastens with a screw at l, 2 feet.

The great advantage in this tool is, that the teeth are so placed, that they intersect each other; and being only twelve inches apart, by thus intersecting, the distance is reduced to six inches; and from the breadth of the share being full three inches, the intermediate space is further reduced, so that the distance is ultimately so small, that the whole of the ground must be perfectly broken down and reduced into a fine layer of mould, in conseqquence of which, the purpose of ploughing is not only answered, but that of lowering likewise, without the roots of the quick-grasses being cut in two; which is a benefit that cannot be obtained by ploughing. And from the teeth standing in a forward direction, and bending in that way, they likewise bring up all the roots to the surface of the land, which is another important point that cannot be gained by the plough.

And there is a considerable abbreviation of labour with this tool, which is another circumstance of great consequence to the farmer; as with four horses and one man, from six to seven acres are capable of being worked over in the course of a day, especially where the loam is of a sandy quality. And at fig. 2, is shown a seed cultivator, which is employed in Eilean, where the grain is sown at narrow intervals, by Mr. Rogers, and other farmers, as stated in a survey of that district, by Mr. Young. The handles from Cook's machine are capable of being attached to it. The dimensions are as below:

<table>
<thead>
<tr>
<th>From a to b</th>
<th>Feet</th>
<th>Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>a to d</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>b to d</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>a to e</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>e to f</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>f to g</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

This is found a very useful and convenient implement in these cases, for working between the narrow rows of white corn-crops.

Fig. 1, exhibits the representation of a beam cultivator, which is made use of by the same farmer at Ardleigh, and which is found in practice to be a most excellent tool.

The dimensions of it are these:

<table>
<thead>
<tr>
<th>From a to b</th>
<th>Feet</th>
<th>Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>a to c</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>b to d</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>c to f</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>d to g</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>g to h</td>
<td>0</td>
<td>5</td>
</tr>
</tbody>
</table>

And at fig. 4, is exhibited a double cultivator, which is found useful on the farm of C. C. Weltens, esq., in the same county.

The dimensions of this are as below:

<table>
<thead>
<tr>
<th>From a to b</th>
<th>Feet</th>
<th>Inches</th>
</tr>
</thead>
<tbody>
<tr>
<td>a to c</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>b to d</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>c to e</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>d to g</td>
<td>1</td>
<td>11</td>
</tr>
</tbody>
</table>

Diameter of wheels | 2 | 1

This is a very powerful and effective implement, and dispitches much work with facility.

An improved implement of this sort is likewise shown at fig. 5, which is found of great utility in preparing and bringing
CUL

flint heavy foils into a fine flate of mould. It is well calculated for this purpose, from the weight which it possesses, and its great length of points. In this tool a, b, c, d, are the beams or bulbs in which the spheres or coulters are placed, and which have a sort of triangular form; d, d, d, the three wheels, which are capable of being raised or depressed, and e, e, the handles.

Implements of this kind are also sometimes constructed of a compound description, as to operate, with certain additions, in respect to spheres, as scorières and fefrifers; and, when complete, as a cultivator. Mr. Cook is the inventor of an useful tool of this nature. See Scarifier and Scourer.

CULTRARIUS. See Popa.

CULTURE. In Agriculture, the art of tilling, improving, or bettering the condition of lands, by such practices as are the most adapted to their peculiar nature and qualities, whether under the systems of grain or grass husbandry.

Culture, Row, is that mode of cultivation in which the crops are sown or set in rows or drills, at certain distances, by means of the hand or machinery. See Drill, Husbandry, and Drill.

CULVER, in Rural Economy, a name provincially given in some districts to the pigeon.

Culver-Houfe, a name sometimes applied to a pigeon-houfe, or dove-cot.

CULVERINE, a piece of artillerie longer than ordinary cannon, to the same calibre. Its length is generally about ten feet six inches. The famous culverine of Nancy is 22 feet long, and throws a bullet of 18 lb. They do not make use of this piece, as it does not throw a ball so far as cannon of the same bore. It is at Dunkirk. See Cannon.

Hence a folder of militia in the 15th century, was called by the French couleuvriier. He wore an habergeon, or small coat of mail, or armour with sleeves, a gorget, or neck-piece, and a head-piece, and brais placed before, with a dagger and cutting-sword.

CULVERT, an arched drain for the passage of water; these occur very frequently under roads, and still more so under navigable canals, for conveying rills and brooks of water from the upper to the lower side of the road or canal, and even for discharging the rain water out of hollows on the upper side of a canal. When such a drain or arch under a canal sinks down in the middle, in order to clear the bottom of the canal, it is said to be "broken-backed." Under the article Canal we have treated pretty fully on the construction of culverts, and have only here further to add some remarks on the culverts for large canals, like the internefs and Fort William, or Caledonian Canal, where it is difficult for the engineer in a short space of time to ascertain the size of culverts for some ravines, sufficient for discharging their flood waters, and not be liable to chock by timber and other matters hurried down some of the streams from mountainous districts, and where it is often advisable to construct two arches, in such places as are deep enough to admit of it, the larger of which may serve for a road-arch, or communication under the canal, at all times but during great floods, by which the inconvenience and expense of bridges over the canal may be faved, in many instances. At Bannavie, a culvert, or aqueduct, as the fame are called, when they exceed a certain fize, under canals, was flinned under the Caledonian Canal, in the spring of 1826, by Mr. Thomas Telford, consisting of two arches 9 feet wide, and to feel high, each, their bottoms being paved with stones on edge, to serve for the passage of carts, cattle, &e., which otherwise might have had a pair of swive bridges over this large canal, which is too wide to admit of one bridge to turn or swing across it. We lately had occasion to notice some places on the upper side of the Grand Junction Canal, in Buckinghamshire, where the culverts are made so small that sudden rains have been known to inundate one or more houses, while hufhes, straw, and other matters are always liable to chock up or diminish the water-way, so as to endanger the lives of the inhabitants, were such to happen in the night of a rainy feafon.

CULVERTAIL, in Ship Building, is used for a manner of letting one timber into another, so that they cannot slip abonder. The tailings of a ship's caulkings into the beam is so performed. See Dovetail.

CUMA, in Geography, a town of the island of Cúleo, situated at the bottom of a large bay.—Alfo, a small island in the Mediterrenean, near the coast of Italy; five miles west of Naples. See Cuma.

CUMAE, in Ancient Geography, Cumae, or Cyme, an ancient city of Italy, in the Campania, well of Naples, and north of Baza, situated near the sea, on a lofty rock or hill, which afforded a beautiful and extensive prospect, and a proper place for the foundation of a citadel. It is said to have been founded in times of remote antiquity by two colonies of Greeks; one of which migrated from a city of the fame name in Sicilia, and another from Chalcis in Euβea; and both of them accustomed to maritime occupations, failed in pursuit of discoveries into the Mediterranean, and established themselves on the coast of Italy. These two colonies, after some previous adventures, settled on the same spot, and determined to share in common the honour and advantage of the situation in which they were established. Accordingly, the Cumans gave their name to the new city, and the Chalcidians gave theirs to the inhabitants, fo that the city of Cumae was inhabited by Chalcidians. This colony, in process of time, became very powerful, and extended itself along the coast of Naples. The first establishment of the Cumaeans was at a place called "Dicarchia," which was adapted to the accommodation of their vessels; and it afterwards took the name of Potusii or Pausaui. The Cumains soon perceived that they had not chosen the most favourable spot for a permanent and flourishing settlement; the gulf of Naples presented a more commodious and defirable situation; but as their capital had been consecrated to the gods, and the sands had possession of their houses, they thought it impolicy to abandon it. However, they built a second town at the bottom of the gulf, and this they called "New Cumae," or Neumae, Cyme. Such was the origin of the name, and of the town of Naples. The Cumaeans made also another establishment at Bassam. Cume, founded as we have related by Greek emigrants, became the seat of commerce, the parent of Naples, and the capital of a state that ruled the seas before either Rome or Carthage were heard of. Its prosperity was of long duration, while the power of infant Rome was confined within the narrow limits of her own plain. Under the sway of Arilodamus, Cume afforded an asylum to Tarquin the Proud, the deposed king of Rome, whom all the neighbouring potentates had in vain attempted to affiét, and had refused to relieve. This harbourer of a banished prince had attained the height of power by subverting the liberties of his country. In the 64th Olympiad, about the 524th year B.C., the Tyrrhenians attacked Cumæ, in hopes of plundering her rich forests, the fruits of long and prosperous traffic, but were driven off with loss; in this emergency, the republic owed its fæcy to the courage and conduct of Arilodamus, and rewarded his services with every token of honour which a free state could bestow. He soon became fo popular a leader, as to excite the jealousy of the senate; with a view to his destruction, they sent him with a very small force to defend
defend the city of Asicia against the Tulcanis; but by the exertion of great military talents, Arisidemus terminated the campaign gloriously, and when he returned to Cumæ, availed himself of the attachment of the troops for destroying his enemies, and usurping the sovereign authority. He reigned many years with despotic authority, but at length, as it has happened to many other tyrants, was betrayed by his own creatures, and, with his whole family, fell into the sword. As Rome advanced in her fortunate career, the glory of all the neighbouring powers fled away before her; the Cumæans, in their turn, submitted to her yoke, and were treated with lenity; but real liberty was gone, and trade abandoned their shores; at length, the dulness and solitude of the place grew so profound, as to become proverbial: “vacuo Cumæ,” “Quies Cyme, &c.” Indeed, the Cumæans were noted for their frugality. “Cumæus is prudent to a proverb,” says Strabo, (lib. 13.;) and he assigns these reasons for it. Fie! of all; they were 300 years before they thought of laying a duty on merchandise imported into their harbours, and before they found that they inhabited a maritime city. Secondly. Having mortgaged their porticoes for a certain sum of money, and failing to pay during the time stipulated in the contract, their creditors would not allow them to walk under them; but, when the rains began to fall, those creditors, being touched with compassion, caused it to be published, that the Cumæans might, if they pleased, take shelter under their own porticoes: which gave occasion to this railing: “The Cumæans had not the sense to know that they had a right to stand under their own porticoes when it rained, till they were informed of it by the voice of the crier.” Cumæ was farther reduced to a lower state by the Goths; and at last, being a mere receptacle for thieves, it was, in the year 1207, totally ruined and forsaken. The rocky hill upon which the citadel of Cumæ flood, is the produce of an eruption, and hollowed into many spacious caverns, amongst which we now look in vain for the grotto where the “Cumæan sibyl” (see Sibyl) pronounced her oracles; this sanctuary was undermined and destroyed in the Gothic war. Agathias informs us that it was fooped over into the form of a temple, the roof of which served as a foundation for one of the principal towers of the fortresses. When Narfes invaded the citadel, he caused this rocky cover to be cut through in several directions, and then propped up with beams when every thing was ready for the assault, the wood was set on fire. As soon as the porticoes were consumed, the rocks gave way, and the walls fell with them into the temple; and on these accumulated ruins the imperial troops entered the breach. If antiquarians may be credited, the cave which was the abode of the Cumæan sibyl, extends three Indian miles in length, to the lake Avernus, where it has another entrance; but in several parts the passages have been ruined; and at the entrance near Cumæ, it is not possible to advance above 200 paces. This part of it is cut out of a rock, and is of considerable height and breadth. Some years ago, the imperial general Wenzel caunted an aperture with 31 steps to be cut in the side of the cave, for the convenience of coming out of it; but the peasants have since flopped it up.

Cumæ extended across the plain towards the east, where many rains are full to be seen. A large brick arch, called “L’Arco Felice,” thrown across a chasm in the ridge that bounds the plain on the east side, is supposed to have been a gate of the city, or a passageway under a Roman aqueduct, and not a monument of the ancient Cumæan republic. In Lucan’s time, about A. D. 62, Cumæ appears to have been a very populous city, from the following passage: “Acidalia quis conditâ Alite muros Euboicam referans secunda Napolis urbem.”

Where the fam’d walls of fruitful Naples lie,
That may for multitudes with Cumæ vie.”

The adjacent country still retains a luxuriant fertility, especially towards “Torre di Patria,” where it produces abundance of fig-trees.

Cumæ, a town of Aëolia, in Æolis, the largest, and most beautiful in this province, according to Strabo. Some have said that Homer, and also Ephorus, were of this city. It was episcopal, as we learn from the acts of the council of Ephesus, held in the year 431.

Cumana, in the Materia Medica, a name given by many of the ancients to Curubs.

Cumana, in Geography, a province of the government of Caracas in South America, including also Barcelona, which, however, has never formed a distinct province, but being included in the grant to the Wafties, was esteemed a part of Venezuela. The town of Barcelona was founded in 1534, on a plain, one league from the mouth of the river Nerevi. The population is computed at 14,000; but the town is disagreeable, and is only noted for feeding twice. The population of the province of Cumana amounts, according to Depons, to 80,000.

The town of Cumana is the most ancient in the Caracas, having been founded in the year 1520, on a sandy soil, about a league from the sea. The heat of the climate is very great; nevertheless the population is computed at 24,000, and is thought to be on the increase. It is, however, subject to frequent earthquakes, which Humboldt proposes to proceed from the volcanoes of Cumana, which force out sulphur and hot-water. The caverns of Cuenanaro emit an inflammable gas, which shines in the night, especially after rains, to the height of 100 fathoms. The population of Cumana is composed chiefly of Creoles, who are indolent, and fond of their native place. The great article of trade is salted fish, which is sent to Caracas and the windward islands; the indolent inhabitants being from Catalonia, and the Canarys. Cumana is difficult of access, and might present a defence of about 5000 men. N. lat. 10° 12'. W. long. 66° 40'.

Cumana, New, or New Andalusia. See Spanish Guiana.

Cumana-gate, a small town in a bay on the coast of Terra Firma, in the province of Cumana; situated on a low flat shore, which abounds with pearl oysters.

Cumanches, a tribe of warlike Indians, who every year enter the province of New Mexico, to the number of about 1500 men. Their country is unknown, as they always march prepared for war, which they carry on against all the other tribes. They encamp in tents made of the skins of buffaloes, and which are carried on the backs of large dogs trained for that purpose. The men are only clad in cloths down to the navel, and the women to their knees. When they have concluded the traffic which brings them to this province, consisting in the skins of wild goats and buffaloes, and little children, whom they have made captives, for they kill the men and women, they withdraw till another year.

Cumanda Guaco, in Botany, a name for certain very large Indian kidney beans, which roasted, contused, and exhibited with an egg, are given for fluxes of the belly; boiled, made into a cataplasm, and applied to the belly, they are said to cure colic pains; and they are in this form applied to apoplexies, with a view of resolving them.

Cumania, or Comania, in Ancient Geography, Kiar-Zafl, a fortress situated on an elevated rock, before the Caucafan gates according to Pliny. He says that it was provided...
provided with a good garrison, for defending the passage
which led to an immense number of barbarians, who inha-
tabited the regions on the other side of Caucasus.

CUMARCA, in Ichthyology, a species of Stromateus; 
which he.

Linn. III. Pl. 601. Clafs and order, diadelphe decan-
drea.

Gen. Ch. Cal. Perinth top-shaped, one-leaved, three-
toothed. Cor. Petals five, two lower ones shorter. Stam. 
Filaments ten, nine united at the base. Peric. Lagume, with 
a single fee.

Sp. C. A tree. Leaves alternate, pinnated; leaflets few, 
alternate, egg-shaped, veined. Flower in a terminal panicule. 
A native of Guiana.

CUMBACH, in Geography, a small town of Germany, 
in the Principality of Saxony, remarkable for a fift 
pound of 120 acres, which yields excellent carp and cels.

CUMBERLAND, a port town of the county of Down, Ireland, 
situated on a branch of the lake of Strangford. It has 
a very fine strand near it, and a race course two miles in circuit, 
it is 84 Irish miles N. of Dublin, and about 9 S. E. from 
Belfast.

CUMBERLAND, Richard, in Biography, an Eng-
lish bishop of considerable celebrity, was born in London 
in the year 1612; he received his classical learning at St. 
Paul's school, whence, about the year 1630, he was re-
moved to Magdalen College, Cambridge. Here he took 
his degrees, and pursued his studies with a view to the prac-
tice of medicine. Physic, however, he soon relinquished for 
the study of theology; and being elected fellow of the col-
lege, he took orders, and obtained the rectory of Brampton, 
in Northumberland, where he continued in the zealous 
discharge of the duties attached to his office, till the year 
1667, when he came to London, and was chosen chaplain 
to Sir Orlando Bridgman, then chancellor, who shortly after 
presented him with the living of Alhallow, in Stafford. 
In this situation he devoted himself as well to the immediate 
duties of his profession, as to philosophical studies. In 
1672 he published a treatise, in quarto, entitled, "De 
Legibus Naturae Diquitii Philosophica, &c." This 
work, which was intended as a refutation of the tenets of 
Hobbes, obtained for its author a high degree of reputa-
tion. It has been twice translated into English, with ad-
ditions. In 1680 he took his doctor's degree; and in 1686 
he published, "An Essay towards the Recovery of the 
Jewish Weights and Measures, comprehending their Monies, 
by Help of an ancient Standard, compared with ours of 
England, &c." Dr. Cumberland was always attached to 
the doctrines of the church of England; and on account of 
his zeal in defence of the principles of the revolution, he was 
called as a fit person to fill the see of Peterborough. To 
this high honour he was appointed without any solicitation, 
and solely on account of his learning, virtues, and zeal; he 
is said even not to have known the fact, till he read an ac-
count of it in the public newspapers. In 1691 he entered upon 
the duties of the episcopal office, which he performed for many 
years with the greatest affiduity. He died in the year 1718, 
of a paralytic stroke, in his 87th year. His life had been ac-
tive, and his various pursuits required deep study and intense 
thinking; but his faculties were strong till almost the last 
period of his mortal existence. So great was the vigour of 
his mind, that, at the age of 54, when bishop Wilkins pre-
tended him with a copy of his Coptic Testament, he felt 
about studying the language, and made so rapid a progress 
in it, that he was able to read the greater part of the version 
with the most critical attention. After the death of bishop 
Cumberland, his son-in-law, Mr. Payne, published "San-
chonitho's Phœnician History, translated from the first Book 
of Eusebius, de Preparatione Evangelica, &c." upon which 
the venerable prelate had bestowed much time and refearch; 
and in the course of the inquiry he was led to other subjefts, 
an account of which he left behind him in MSS., which was 
published by the same editor, under the title of "Origines 
Gentium Antiquissima, or, Attempts for discovering the 
Times of the first Planting of Nations." The character 
of this learned prelate was highly esteemed by his contempo-
raries; his principles were moderate; and he was careful 
towards those whole sentiments did not correspond with 
his own. His manners were unassuming, condoleacing, and 
affable; and his piety was the result of excellent habits 
formed in early life. He was of course without orientation; 
and by his example, as well as by his advice, he did 
every thing in his power to render the clergy in his diocese 

CUMBERLAND, in Geography, a maritime county in the 
northern part of England, bordering Scotland, is bounded 
by the well by the Irish Sea, into which its western coast 
projects, somewhat in the form of a bow, to an extent of 
neatly 70 miles; on the north it is separated from Scotland 
by Solway Frith, the Scots Dyke, and the river Liddal; its 
eastern side is fringed by the counties of Northumberland 
and Durham and in the south is separated by Uils-water and 
the river Eamont, and from the latter by the river Duddon. 
The greatest extent of the county is about 80 miles, but its 
mean length is not more than 60; its general breadth is nearly 
35; and its circumference 224. It contains 970,000 acres; 
of these 342,000 comprise the mountainous districts; 
470,000 are enclosed, and chiefly under cultivation; 150,000 
are in low commons, capable of improvement; and 80,000 
in lakes and waters. Cumberland is divided into five wards, 
with the hundreds in other counties; but in both the 
called here, from the inhabitants of them division being 
formed to keep watch or ward against the incursions 
of the Scots, in times of warfare. It contains one oity, 
Carlisle, 17 market-towns, 112 parishes, 22,445 houses, 
and 112,250 inhabitants. The ward of Allerdale, above 
Darwent, is in the diocese of Chester; all the other part of 
the county in that of Carlisle. The representatives in parliament 
are six, viz. two for the county, two for Carlisle, and two 
and two for Cockermouth. Cumberland pays one part of the 
tax, and provides 200 men for the militia.

The surface of the county is extremely irregular and 
broken. The south-western district exhibits a gigantic 
combination of lofty, rugged, and rocky mountains, promi-
nuously thrown together, but enclosing many beautiful, 
though narrow, valleys, as well as fine lakes, rivers, and 
some extensive woodlands. The eastern counties, another 
range of hills stretches along to Scotland, but possesses much 
less picturesque beauty than the former. In the front of this 
last affembly, a considerably broad tract of low ground 
extends the whole length, unsubstituted by any high mounts, 
partly cultivated, partly heathy common, and watered by 
the Eden, and numerous streams and rivulets. This tract 
becomes very extensive before it reaches Carlisle; extending 
across the county to Wigton, and thence towards Wainning, 
including all the northern part of the county. Along 
the western shore there is a strip of cultivated land, from two 
or four to five miles in width. The woodlands are but few; 
and the general appearance of the county is black and naked, 
from the extensive moors which so frequently present 
themselves to the eye of the traveller. The soils of this district 
are exceedingly various, but have been classed under the 
divisions of loamy clays, or strong rich loams, which occupy
but a small portion of the county, and are chiefly appropriated to the growth of wheat; dry loams, including the different degrees from the rich brown loams to the light sandy soils, and occupying the greater portion of the land; wet loam, generally on a clay bottom, and adapted to grazing; and black peat-earth, which is very prevalent in the mountainous districts, and particularly those adjoining Northumberland and Durham. The enclosed grounds are kept free from moles by an excellent practice observed in the different parishes, of hiring persons to destroy them for a term of years, at a certain annual salary, which is raised like the regular parochial taxe, and does not exceed an halfpenny per acre.

The buildings of this county are chiefly of stone, except in the market-towns, where the houses are generally of brick; and near the borders of Scotland, where they are mostly constructed with clay or mud. Most of the old farm-houses, cottages, and out-houses, are thatched with straw, and the stones of the walls laid with clay instead of mortar; but the more modern buildings are generally covered with slate, and their walls cemented with lime: in those districts, however, where clay or mud walls prevail, the advances of modern improvements are admitted and approved. It is not, however, in the people considering them as an expensive and unnecessary luxury. Many of the houses are covered with a very fine blue slate, the best kinds of which are procured in Borrowdale.

The principal manufactures of Cumberland are the spinning and weaving of cotton into calicoes, corderays, and other articles; and the printing of cotton. The former has not been many years introduced; it was first planted at Dalton, and soon extended to Carlisle, Warwick-Bridge, Corby, Comerfdale, and a few more places. The fest of cotton-printing is at Carlisle, the population of which place has thereby been much increased. In some of the market-towns are small manufactories of checks and coarse linens. At Egremont eighteen looms are employed in the manufacture of fall-cloth; and at Whitehaven, where it was only introduced in 1786, several hundred hands are employed in the different branches of the same manufacture. Three or four paper-mills are employed in different parts of the county; a manufactury of coarse earthen ware has been long carried on near Dearham; and near Workington are the Seaton iron-works, which employ several hundred workmen. Many private families knit and spin their own stockings; and every village is supplied with a weaver or two, who weave their home-made cloth.

The mineralogical substances of Cumberland are extremely rich and variegated, and exist in such abundance in the different parts of the county, that a description of the whole would, of itself, constitute a work of considerable magnitude. In the calcareous genus is limestone, of various colours, texture, and hardness. The quarries at Overend contain impressions of many kinds of shells, with ammonite, entrochti, and alteritum, and a great variety of marine exuviae are found in the limestone on the moors near Gisland Spa. Marble, with shells in it, of a brownish colour, is met with at Little Stainston and Daere; dusky-green, veined with white, at Crof-fell; yellowish, grey, lead-colour, and brown, with or without shells, on the banks of the Peterli; and blue-in-black, clouded with lead-grey, veined and spotted with white, hard, free from cracks, and admitting of a fine polish, near Kirkowfald. Beautiful specimens of spar of various colours, amorphous, and crystallized in different forms, are found in the lead mines of Alditon-Moor; and, since the study of mineralogy has become fashionable, have been sold for considerable sums. In the mines between Keswick and Alditon it has been met with, crystallized in hexagonal prisms, terminated at one end by a pyramid. Gypsum is found in many parts of the county; its colour is mostly white, veined, clouded, and spotted with red; sometimes brown and grey; of compact, even fracture. It frequently, however, exhibits a considerable variety of appearance, even in the same quarry; and at Newbiggen is met with not only compact, but splintery, fibrous, foliated, and crystallized: in the latter state, the crystals are green, and colourless, arrow-headed, and irregularly disposed, forming the resemblance of a cock's comb. It lies embedded in red argillaceous marl, between two large strata of sandstone: the upper, solid, hard, and fine-grained; the under, loose, friable, and coarse. The strata vary considerably in thickness; and in some places, immediately below it, there is a thin bed of a soft umber-like substance, which, on examination, appears to be decayed wood. The lead-mines of Alditon-Moor contain a great variety of flours, compact, foliated, amorphous, and crystallized. The colours are red, green, blue, yellow, purple, violet; and of all gradations, from very pale to almost black. They are sometimes found flinted with brilliant quartz crystals, and with crystallized galena. In the latter genus, reds, greens, and blues are much found of many different colours, interpered and incorporated with several kinds of flints, and particularly in mottl of the sandstone rocks. Spangles of silvery mica are met with in a red, flaty, friable stone, near the river Calder, in the quarries on the Peterli, and various other places. The fritiates, semi-indurated, white, streaked with pale green, has been found at Hill Top and St. John's; and some of the solid white kind in Langnor iron-mine, at Borrowdale, and at one or two other places. Some small rounded masses of ferpentine are met with in many parts on the sea-shore, and sometimes, but rarely, in ploughed grounds. Albitelles has been discovered in the lead mine at Northend, and in some of the mountains, where it presents a great variety of appearance, as it seems to graduate into different substances.

Of the fulicicous genus are quartz crystals, which are found in the mines of Alditon-Moor, beautifully transparent, and of various forms and colours: some of the yellow kind are but little inferior in brilliancy to the Brazilian topaz. Garnets are not unfrequently found in micaceous flint; and some beautiful small ones have been met with in the neighbourhood of Keswick. Cornellians of various tints, but principally of different shades of red, are often discovered on the sea-shore, and near the surface of the earth in many other places. Jaspers of different colours, often veined, clouded, and spotted, are generally met with in beds of rivers, and on or near the surface of the ground. Many substances of the argillaceous genus are found in different parts of the county. Trap, whinstone, and toadstone, exist almost everywhere; the two latter generally in detached pieces on the surface. Schistus, of several varieties of colour, is found in immense strata in many parts; and calcite clay, frequently of a tabulated fracture, resembling the leaves of a book, is met with in most coal-mines, at Gisland, Keswick, and various other places. Terra-porcelaine, or porcelain clay, the kaolin of the Chinefee, is found at Barrock, near Neblespit; it is of a white and cream colour, mostly friable, and dully; it contains minute particles of shining silvery mica. On the banks of Ullswater, triopli is frequently discovered in rounded lumps, of a greenish colour, in gravel beds sometimes, and in coarse marl clay. Tufa, or pit-coal, is found in many parts of the county, and of very different qualities. It is met with in various places along the eastern mountains; but is easiest of access, and in the greatest abundance, on Talkin and Tindall Fells, whence Carlisle, Penrith, and Brampton.
CUMBERLAND.

Brampton are chiefly supplied. On the well side of the river Calder, near Caldbick, and thence to Maryport, Workington, and Whitehaven, it exisls in great abundance; and many coal-mines are doubtfully at work in this district, and particularly at Whitehaven. Some very large pits have also been opened at Workington and Timdale Fell near Brampton. Thirty layers of bit and of principal metal, in the rocks on the 1st thing, in small detached pieces in the bed of that river, on the sea-shore, and near the surface of the earth in other places. Wallerians, and other eminent chemists, have supposed it to be asphaltum, condened and hardened by length of time. It bears a fine polish; and is frequently worked into toys, bracelets, boxes, buttons, and other articles. The famous black-lead, or wad mines, are situated at the head of Borrowdale, in a place extremely difficult of access, and, for the riches and qualities of the sublustrance, are unequalled by any in the world. The mines lie to the east of a very steep mountain, which forms the west side of the vale of Stomathwaite. There are two workings: the lower one is about 340 yards above the level of the sea, and its perpendicular depth about 155 yards; the upper one is nearly 390 yards above the sea, and its depth about 30. The Ilrata of the mountain are very irregular, and broken; and the black-lead appears to have been formed in the fissures. The mineral itself does not exis in regular Ilrata, but is found in irregular maules. It is described as lying in the mine in form resembling a tree, having a body or root, and veins or branches spreading from it in different directions; the root or body is the finest black-lead, and the branches the world; growing proportionally more inferior, as they become distant from the parent root. The veins, or branches, sometimes shoot out to the surface of the ground; yet these indications are very rare. The black-lead is generally embedded in a blue rock, which is not unfrequently flamed as black as the mineral itself to the depth of two or three feet; sometimes there is a wet fludge between the rock and the black-lead; at others it is found in tops, or lumps, in a body without branches. In the deepell mine, the black-lead lies in two veins, crossing each other; the main body, and richest in quality, being at the point of intersection: these veins fall perpendicularly to the depth of 40 fathoms. The blue flonce, where the black-lead is commonly found, has often a Ilrata of hard granite above it. Quartz crystals are frequently discovered in the working. The country in the immediate vicinity of the wad mines has been described by a native of Cumberland (Mr. George Smith), as full of cataracts and rivers, that are precipitated from the crags with an alarming noise; and the summit of the mountain itself, in whose bowels this valuable mineral is produced, has been depicted by the same gentleman as truly terrifying. "Not a herb was to be seen but wild fawine, growing in the interstices of the naked rocks; while the horrid projection of vast promontories, the viciny of the clouds, the thunder of the explosions in the slate quarries, the distance of the plain below, and the mountains heaped on mountains that were piled around us, deformate and waste, like the ruins of a world which we had fireved, excited such ideas of horror as are not to be expressed." The value of this libitance, and the fingular fraud of an owner of a contiguous part of the mountain, who secretly funk a haft, and opened a passage diagonally to the mine, occasioned an acl of parliament to be made in the reign of George II. to prevent its being stolen, by subjecting the criminal to the same punishment as for felony. In this acl there is a recital, that black-lead hath been discovered in one mountain or ridge of hills only in this kingdom; and that "it hath been found, by experience, to be neccessary in the cafting of bomb-hills, round-hills, and cannon-balls." The chief use to which it is now apply'd is drawing; and the lead of some pencils made at Keswick is of fo very fine a texture, that it bears a point nearly as sharp as that of a needle. Some affert that it may be used medicinally, to cafe the pains of the gravel, stone, lithurgy, and colic. The principal sublustrances of Cumberland are lead, copper, and iron ores. The lead mines are chiefly in Aldton-Moor, on the south-east borders of the county, where about 1,100 men are employed, and clear to the owners upwards of 16,000l. per annum. In working some of these mines, the miners frequently meet with large breaks in the rock, like grottions, wholly encrusted with the most beautiful fpars, which, on entering, has the richest appearance imaginable. The whole cavern, by the light of a candle, reflected from a thousand points, appears as if beautifully with gold, fliver, and diamonds. These internal openings are generally closed up as soon as found; the fpar they contain being a great temptation to the workmen to neglect the service of their employers, as they could obtain more by gathering and selling fpar than by their own business. Galena is found, in the varieties, in the mines in the vicinity of Aldton, Keswick, and Caldbick; and it not unfrequently contains a considerable portion of fiver. The lead ores, in the mines of Aldton-Moor, are found lying in cracks or siffures. These siffures, though commonly near the perpendicular, are never wholly so; and in whatever direction they are found, they always incline downwards from that fide where the Ilrata are highest: thus, in a vein from north to south, if the Ilrata should be raised higher on the south fide the sifire than on the north fide, its inclination will then be from the south downwards to the north. The copper ores are commonly combined with sulphur, and generally contain both iron and arsenic. The most celebrated copper-mines are near Caldbick, at Helset New-Market in Borrowdale, and at Newlands in the neighbourhood of Keswick, where the celebrated mine of goldcarrp is situated; from which, by the old workings, and written documents, it appears that immense quantities of copper have formerly been obtained. Specimens of copper ores have been found in the mountains named Hard-knot and Wy- nofe, and at some other places. Ochreous iron ores, re- sembling those called by Mr. Kirwan highland argillaceous ores, are very commonly met with either on or near the surface, in most parts of the county, especially in moory foids, and where the under-Ilratum is a coarse martial clay. They appear to have been deposited by water, as they are generally found concereted with small flones, roots, and other flubances. In the parish of Etterby, at a place called Crowgarth, is the most fingular mine of iron ore supposed to be in Great Britain. It lies in the earth, at the depth of 12 fathoms; and the thickness of the band of ore, which is hard folid metal, is between 2.4 and 2.5 feet. It was never known to be much wrought till the years 1784 and 1785, when it was more generally opened; and so great has been the demand for it, at Carron foundery in Scotland, and some other places, that, in 1791 and 1792, the annual exportation was 20,000 tons and upwards. At Langnor, between Whitehaven and Egremont, many varieties of the hammerats are found, and sometimes, from their colour and shape, are called kidney ore. Native Prussian blue is sometines found in the peat-mofs of this county, and in clay, particularly that of Eterby-lea, near Carlith; its quality, however, are different from the artifical.

Among the semi-metals, blende, pseudo-galena, or blackjack, is met with in the greatest plenty. Its forms and colours are very different: some is bluith, resembling galena; some is black,
black or greenish-black, like pitch; of a glossy shining surface, often crystallized, in irregular pyramids, and other irregular figures; sometimes containing silver, arsenic, and other substances. Oxyd of zinc has been found at Borrowdale and Outley. A mine of cobalt was discovered about ten years since, in the parish of Crowle, near Cowdale, about four miles from Kewick; but has hitherto been little regarded. Antimony has been found at Borrowdale; and in the stratum under the coal at Tindale and Kewick has also been discovered at Caldbeck.

This country abounds with lakes; some of which will be hereafter described under Lake. The principal are known by the names of Ulls-water, which occupies an area of about 9 miles in its greatest length, by about three-quarters of a mile, on an average breadth; Thirmore, or Leathes-water, a narrow irregular sheet of water, about 3 miles in length, skirts the immense bafe of Helvellyn; Derwent-water, or Kewick lake, is rather of an oval figure, and extends nearly 3 miles in length, and about half so much in breadth; Baffentworse-water, or Broad-water, which is nearly 3 miles north of Kewick lake, abounds with beautiful scenery, and is 4 miles long, and 1 in its greatest breadth; Over-water, in a barren situation between Binney and Caldbeck-fells, is about half a mile in length, and in breadth somewhat more than a quarter of a mile; Lowes-water, beautifully situated near the north-western extremity of the mountains above Mellbreak, is about a mile long, and a quarter broad, and, contrary to the other lakes, discharges its waters at the southern end; Crummock-water expands itspellic bofoc beneath some rocky mountains, and extends nearly 4 miles in length, and half a mile in breadth; Buttermere-water, about a mile south of Crummock-water, from which it is separated by a luxuriant vale, is about a mile and half long, and half a mile broad, into which numerous torrents pour down from the mountains, one of the roaring cataracts falling between four and five hundred yards; Ennerdale-water spreads among the mountains near to Whitehaven, and guarded, on every side but the well, with craggy and almost impellable heights, pours a cascade of about 2 miles and half in length, its greatest breadth being about three quarters of a mile: Wait water expands its crystal surface in the bosom of Waitdale, to the length of 3 miles, and breadth, in the wild part, of three quarters of a mile; Born Mountain, situated among the wildest mountains at the head of Minterdale, covers about 250 acres; Devock-water occupies about 300 acres; a moor, at the hills south-east of Ravenglass; Talkin-urn, and Tindal-urn, possess about 70 or 50 acres each, on the moors south-east of Brampton; and Turnwalding spreads its waters over 100 acres, on a barren common, 1 mile west from the river Eden, at Armathwaite.

The mountains of Cumberland are exceedingly numerous, and many of them of immense elevation, and singular structure. They enter into the composition of almost every view; and either by their sublime heights, their romantic forms, the dignified grandeur of their aspects, the immensity of the rocky miles that compose them, or the wild, awful, and imposing majesty of their appearance, are well calculated to give birth to interesting emotions.

The rivers and smaller streams of this country are very numerous. The principal are the Eden, the Estom, the Usland, the Eden, the Derwent, the Great, the Cockler, the Eden, the Waver, the Wempool, the Callow, the Peltich, the Ell, the Liddal, the Line or Laven, the Irthing, and the Gelt. Hutchinson's History of the County of Cumberland, 2 vols, 4to. Houleman's Topographical Description of Cumberland, &c. 8vo.
CUM

Also, a large bay, so named by Captain Cook, in January, 1775, in the S. Atlantic ocean, near the coast of the island of Georgia, a few miles E. of Paffion bay, in S. lat. 54° 5', W. long. 27° 16'.—Also, a bay in the most northern part of America, opening under the pullar circle, running to the N.W. and W., and supposed to communicate with Daffin's bay on the N., lat. 60° 44'. W. long. 65° 20'.—Also, a harbour on the W. side of Whalton's life, on the N.W. coast of N. America; S. of Shitikino, and N. of Com- nahan's. —Also, a harbor on the S.E. coast of the island of Cuba, reckoned to be one of the finest in the West Indies, capable of sheltering any number of ships; 20 leagues E. from St. Jago de Cuba. N. lat. 20° 3'. W. long. 76° 52'.

Cumberland. Cape, a cape on the island of Espiritu Santo, one of the New Hebrides, in the S. Pacific ocean, S. lat. 14° 39'. E. long. 160° 47'.—Also, a cape on Kerguelen's land, 2 1/2 league S.E. S. from Christmas harbour.

Cumberland Fort, a fort of the United States of America, in New Brunswick, situated at the head of the bay of Fundy, on the E. side of its northern branch. It is capable of accommodating 300 men. —Also, a fort which formerly stood in Cumberland township, in Allegany county, Maryland, at the W. side of the mouth of Will's creek.

Cumberland Fort, a strong place at the S.E. point of Portia island, in Hampshire, commanding the entrance into Langdum harbour. In the government trigonometical survey, in 1793, the west chimney of the governor's house in this fort was observed from Butler hill, distant 79,019 feet, and Rook's hill, distant 74,893; whence is deduced its latitude 50° 47' 11" N., and longitude 1° 1' 43", or 4° 61' 8" W. of Greenwich.

Cumberland Gap, a place having a post-office, in Chil- borne county, and state of Tennessee; 528 miles W. from Washington.

Cumberland House, a factory belonging to the Hudson bay Company, situated in New South Wales, in North America, on the S. side of Pine island lake. N. lat. 53° 56' 41" N., W. long. 105° 13'.

Cumberland Island, an island on the coast of Camden county, in the state of Georgia, between Prince William's point at the S. end and the mouth of Great Satilla river at its N. end, and 20 miles S. of the town of Frederica. It is about 20 miles in circumference. N. lat. 31° W. long. 81° 40'.—Also, an island in the South Pacific ocean, so called by captain Wallis, in 1779, lying low, and about the size of queen Charlotte's island, or 6 miles long, and 1 wide. S. lat. 18° 18'. W. long. 140° 36'. Variation of the needle 7° 10' E.

Cumberland island, a cluster of islands near the N.E. coast of New Brunswick, so called by Cook in June, 1770, forming a passage, called, from the day of its discovery, "Whitunday passage." S. lat. 20° 30'. W. long. 211° 28'.

Cumberland Mount, a mountain of N. America, occupying a part of the uninhabited country of the state of Tennessee, between the districts of Washington and Hamilton and Mero district, and between the two first-named districts and the state of Kentucky; the northern part of the ridge being the dividing line between Kentucky and Vir- ginia. The ridge is generally about 50 miles broad, and extends from Crow creek on Tennesse river from S.W. to N.E. In Tennessee it enlarges in width to 90 miles, and with a surface to level, it may be called the highlands.

On both sides of the mountain is found limestone. The mountain contains of the most impetuous piles of craggy rocks of any mountain in the western country. It is inaccessible for miles, in some parts, even to the Indians on foot. In one place, near the summit, it has a very remarkable ledge of rocks, about 50 miles long, and 200 feet thick, presenting to the S.E. a perpendicular face. More.

Cumberland River, a river of N. America, called by the Indians "Shawanee," and by the French "Shawano," which falls into the Ohio, 12 miles above the mouth of Tennesse river, and about 21 miles due E. from fort Maffic. It is navigable for large vessels to Nashville in Tennessee, and from thence to the mouth of Obic's or Obas river. The chief branches, some of which are navigable to a great distance, are the Casy fork, 100 miles wide, joining it 120 miles above Nashville, Harpeth, Stones, Red, and Obic's. The head waters of this river are separated by the Cumber- lands mountains from those of Clinch river. Its course, till it comes to the fourth line of Kentucky, is S.W., then westerly, in general, through Lincoln county; thence S.W. into the state of Tennessee, where it enters, by its windings, Summer, Davidson, and Tennessee counties; it then takes a north-westerly direction, and re-enters the state of Kentucky, and from thence preserves nearly an uniform distance from Tennessee river to its mouth, where it is 300 yards wide. It is navigable without interruption for more than 500 miles. In passing through Mero district, its meanders form several peninsulas, 14 or 15 miles round, and about one across the lumen. Made.

Cumberland River, a place so called, where a post-office is kept, in Tennessee; 17 miles from Cumberland mountain, and 81 from the Crab orchard in Kentucky.

Cumberland Township, a township in Upper Canada, lying partly in the county of Stormont, and partly in Dun- das, and being the sixth township on ascending the Ottawa river.

CUMBRAY, Great and Little, islands of Scotland; the former is about 6 miles in extent, and lies at the mouth of the river Clyde, between the isle of But and the county of Air; the latter is smaller, and about half a mile from the former.

CUMBRI, or Comsdo Goombaw, a large and pop- ulous city, is the route from Laos in Thibet to Pekin in China, where is situated, near a small river, a spacious and celebrated, durabula, or temple of public worship, (Buddhia, the manroth of Buddha.) When the Lama of Thibet, at the earnest solicitation of the Chinese emperor, determined to pay him a visit, he began his journey from Tsholmo in July, 1779; in 46 days he reached Ducha, or Dooboo, rested on the banks of a river of the same name, where a messenger from the emperor met him, and presented to him pearls, filks, and many other valuable articles, with a rich palanquin; after a journey of 21 days more, he arrived at Thibetirahing, or Thoskhharing, receiving in his progress every possible token of respect and homage. Here he was met by eight persons of distinction, and 2000 troops, who were commissioned by the emperor to attend him; but the lama, having received their presents of gold, silver, horsec, mules, filks, &c. dismissed them; and proceeded thence to Cambu, to the temple of which many thousand devout persons annually repair. Here he was detained four months, at account of a great fall of snow; and during this stay he received from the emperor costly presents of pearls, a curious watch, foolbox, and knife all ornamented with jewels besides many curious brocades and filks. At this place, and in other stages of his journey, he was importuned by all ranks
ranks of people for a mark of his hand, which, being coloured with falirion, he impressed on clean paper. Many thousands of these were printed, dispersed among the people, and preferred as the most facer reliks. At this place he was again presented, by the emperor's orders, with a very rich palanquin, a large tent, 20 horses, several mules, &c.; the whole amounting in value to upwards of 25,000 pounds; an illusion of silver being worth about 7l. After several months the Lama purfued his journey, followed by a very numerous train of attendants, receiving costly presents in every league of his progress; and at length was introduced with princely parade to the emperor's presence; who ex- pressed a wish to be instructed in the mysteries of his religion. After an intercourse of several months, the Lama fiekended of the small-pox and died; nor was less attention paid to his corpse than to his perfon while he lived. It was deposited in a temple of gold; and the emperor distributed silver on the occasion, to the amount of four lacks of rupees, to the devout persons who attended and offered prayers over the corpse. Another lack of rupees was distributed before the corpse was removed, in order to be carried in the temple of gold, enclosed within another of copper, into his own country. After a tedious journey of more than seven months, they arrived at Dagshai, or Tehno Laomboo, the palace of the Lama's residence, whith he lived. Here his remains were deposited in a most superb pagoda, or monument, built for that purpose; and the two temples of gold and copper, brought from Pekin, were carefully fitted up, and set up in the pagoda, immediately over the spot where the corpse was laid. Turner's Emb. to Tibet, Appendi-

CUMERLE, and CUMERLOBOTANE, in Botany, the name by which the Greek writers have described the Ipathus or hop.

CUMERIUM PROMONTORIUM, in Ancient Geography, a promontory of Italy, which advanced into the Adriatic sea, to the north of Anona, and near it.

CUMI, a town of Ethiopia, situated, according to Pliny, on the banks of the Nile.

CUMIANA, in Geography, a town of France, in the department of the Po in Piedmont in Italy, which formerly belonged to Sardinia. It is the chief place of a canton, in the district of Pignerol, with a population of 4571 individuals. The canton has 8 communes, and 9670 inhabitants.

CUMIERES, a small town of France, on the river Marne, in the department of the Marne; 3 miles N. of Epernay; famous for its excellent champagne wine.

CUMILLUM MAGNUM, in Ancient Geography, a place of Italy, marked in the Itinerary of Antonine on the route from Rimini to Dertona, supposed to be the present Gig- nomad.

CUMIN, in Botany. See CUMINUM.

CUMIN, Galdrad. See LAGOECIA.

CUMINIOIDES, Tourn. See LAGOECIA.


Gen. Ch. Universal and partial umbels four or five-rayed, uniform. Leaves of the general involucre three or four, conical or trilobed, at least as long as the umbel; of the partial one, three or four, brille-shaped, as long as the rays of the partial umbel. Cal. proper superior, very small, five- toothed. Cor. Petals five, emarginate, inflexed, somewhat unequal. Stam. Filaments five; anthers simple. Fig. Germ inferior, larger than the flower, oval-oblung; stigmas two, very small; figmas simple. Fruit oval-oblung, frit- rated. Seeds two, convex on one side, flat on the other.

Eff. B. Fruit oval-oblung, fritrated. Partial umbels about four. Involucres three or four-leaved.

Sp. C. Cuminum. Cumin. Linn. Sp. Pl. Mart. Lam. Wild. Gard. tab. 23. Lam. Ill. Pl. 104. Woodl. Med. Bot. tab. 191. (C. femina longiori; Scab. Prosp. 145. Movif. Hist. 279. § 9 tab. 1, 2.1. C. sativum; Cam. Epit. 3. Hift. 433.) Root annual, white, oblong, slender. Stem fix or seven inches high, smooth, fritrated, leafy, branched. Leaves alternate, rather diffrent, finely cut like those of anife or fennel; segments few, almost ca- pilary, about an inch long, generally bitenate, the two lateral ones often simply bifid. Flowers small, white or purplish; three or four, feveral five in each partial umbel. Fruit aromatic, crowned with the minute teeth of the calyx, terminated by the short reflexed fylies. Seeds with nine femail fyliform furrows on the convex fide, smooth or slightly hifpid. A native of Egypt and Syria. It is culti- vated for fale in Sicily and Malta, whence the reft of Europe is supplied with the feeds. They have an aromatic, warm, and bitterif hafle, with a strong, but not disagreeable, fmill; contain a large quantity of effential oil, and are fuppofed to poftiff a carminative and febol introduces power, equal, if not fuperior, to most of thofe of the umbelferous plants. The Dutch are faid to put them into their chefe, and the Germans into their bread. In Malta the plant is called cumino aigor, or hot cumin, to diftinguifh it from anife, which they call cumino dolce, or sweet cumin.

Cuminum fynum rotundifer & minor; C. Bauh. See Pippinella anisum. B.

Cuminum fynum rotundifer, capitulis globosis; C. Bauh. See LAGOECIA.

Cuminum fynum rotundifer, filiquum pone; Delch. See Hy- fecum creticum.

CUMMASBAWAS, or CUMMASBAAWA, in Geography, a fount and village on the E. fide of Washington island, on the N.W. coast of North America. The port is capacious and fafe; and its mouth lies in N. lat. 53° 25' 50", and W. long. 228° 22'. At this port the women take the prece- dency of the men in every point, and particularly in their commercial concerns.

CUMMINGTON, a township of America, in the flate of Massachufefts and county of Hampshire, lying about 20 miles N.W. of Northampton, and containing 985 inhabitants.

CUMNER, or CUMMAR, a vicarage in Berkshire, in the hundred of Horner. On the hill in this parish, which is near to Oxford, a fation was chofen in the government tri- gonometrical survey in 1759, about 130 feet W. of the centre of the clump of trees; the situation of which was de- termined by an obfervation from Shotover hill, diftant 29,231.5 feet; and bearing 76° 58' 30" N. E. from the parallel to the meridian of Dondle; and another from Whitebrin- hill, diftant 1474.3 feet; whence it deduced its latitude 51° 44' 2" 4 N., and longitude 1° 18' 18" 4, or 5° 15' 4 W. of Greenwich. This fation was used with Shotover fation, for fettling the place of Oxford observatory, in connection with this survey.

CUMPETES, in the Materia Medica, a name given by some of the Greek writers to the carpus of Galen and others. This was an aromatic drug, and was the younger fruits and tender twigs of an odoriferous tree, growing on some mountains in Pamphylia, which were collected in the spring,
spring, and, when dried, were used as a succedaneum for the
cinnamon. The word cumpetens often occurs in Myrc-
fiaus; but there is some doubt in the orthography, whether
it be cumpites or cumpetes: there seems no reason to be-
lieve the latter to be the proper word. Charito mentions
this drug in his antidotes; and the commentators usually explain
it by the word carya or carya, a name by which they
understood, though improperly, the cubebes. The Greeks
of the later ages, and the Latin writers who succeeded them,
all fell into the same error, of calling the carya the cubeb;
though the accounts of the ancient Greeks are against it.
Nay, Avicenna seems to have given into the same error; for
he has transcribed into his chapter of cubebes what Galen
says of the carya.

CUMPULUNGO, in Geography, a town of Walachia; 56
miles N.N.W. of Bucharest.

CUMUSTWITH LEAD-MINE, in Cardiganshire in
Wales, was worked by the mine adventurers of England,
about the year 1750. It was famous for its bellies of ore,
from 4 to 7 yards broad, from 10 to 50 yards long, and
from 4 to 7 yards high, with sometimes only a leader of an
inch thick between thefle, for 5 or 10 yards together, both
in linking and driving; in some places the ore was found
interwoven, as it were, with the fulness of the rock.

CUN, or CUNNA, at St. Bidean. See County.

CUNAXA, in Ancient Geography, a place of Aisa, in
Asia, situated on the left bank of the Euphrates, and at
the distance of five stadia from Babylon, where the combat
took place between Cyrus and Artaxerxes.

CUNCIULIANA, an episcopal town of Africa, in
the Byzantine territory.

CUNDNER, JACQUES, in Biography, a French painter
and engraver, who flourished at the commencement of the
17th century. He engraved the portraits of the first pre-
idents of Aix in Provence; a book in folio, 1641; as well
as other prints from different masters. Heckenbeck.

CUNEGES, in Geography, a small town of France, in
the department of the Dordogne, chief place of a canton,
in the district of Bergerac. It has but 457, but the canton
contains 927 inhabitants, in 18 communes, upon a terri-
torial extent of 1757 kilometers.

CUNEGO, DOMENICO, in Biography, an engraver of
considerable eminence, who was born at Verona in the year
1777. At first he studied painting in the school of Fran-
ceco Ferrris, but afterwards entirely renounced the palfet
for the engraver. Many of the finest prints in that beauti-
ful selection, entitled, the Scuola Italiana, published at Rome
by the late Mr. Gavin Hamilton, are by the hand of this
master. At an advanced period of life, Cunego formed a
design of publishing the entire work of Michael Angelo, in
the Selvina chapel; and though the encouragement he met
with was not sufficient to enable him to complete the noble
undertaking, we are indebted to him for transcriptions of several parts of that chapel, which were never previously
engraved, independent of prints in outline, upon a small
scale, of the entire work. Domenico had two sons, Aloyso,
born in 1757, and Joseph, born in 1760, who both prac-
ticed the art of engraving, with a facility, however, very
unlike that of their father.

CUN, in Ancient Geography, a people of Spain, who
are supposed to have inhabited a district called Cuneus, cor-
responding to the kingdom of Algarve.

CUNER in Conchology. There are several fossil shells
which authors refer to this genus, whose species have no ex-
istence among the known recent shells. Da Colia has fig-
gured one of these, Tab. 6, fig. 5, which is modi
fluddled. Other fossil cuneus are reticulated, and some ful-
culated, &c.

CUNEI, in Natural History, a name given to those tellina,
which have one side of their shell much more extended than
the other. See Muscul_el.

CUNEIFORM LEAF, in Botany. See Leaf.

CUNEIFORME, in Anatomy, a name given to several
bones. The sphenoid bone is often mentioned by that
name. There is an os cuneiforme in the heel plating of the
carpus; and there are three osa cuneiforma in the tarsus.
See Skeleton.

CUNELIONE, in Ancient Geography, a town of Al-
bia, situated, according to the itinerary of Antonine, be-
 tween Verulamia and Spina; now Marlborough, Wilt-
shire.

CUNETTE, in Fortification. See Cuevette.

CUNEUS, in Ancient Geography, a country of Spain, in
Loturiusia, since called the kingdom of Algave.—Also, a
promontory of Spain, in Loturiusia, now Cabo di Santa
Maria.

CUNES, one of the mechanical powers; more usu-
ally, by English writers, called the WEDGE; which see.

CUNES, among the Romans, a term often used to fig-
ure that part of the theatre where the spectators sat, on
account of its resembling the figure of a wedge.

This term is often found in the descriptions of the ancient
theatres and amphitheatres, and is thus explained. The
seats being disposed circularly, were divided at regular dis-
tances by flights of steps, which gave access to them, and
to the vomitoria, or doors of entrance. These flight-cars
being directed to the centre of the circle, divided the seats
into sections of the figure of a wedge, cuneus, from which
circumstance they were named.

Cuneus, the wedge, was also a form of battle frequent
among the Romans. See Wedge.

CUNIUS, PARABOLIC. See PARABOLIC CUNIUS.

CUNGI, CONGI, OR CUNGI, BATISTA, in Biography,
of Borgo S. Sepolcro, a painter of the 16th century. He
affiliated Giorgio Vafari, in company with Cristoforo Gre-
rardi, in his works in the reftory of S. Michel in Bologna,
at Bologna.

There was also a Francesco Cungi living at the same time,
who was probably the brother of Batista. Vafari.

CUNGI, CONGI, OR CUNGI, LIONARDO, a painter, na-
tive of Borgo S. Sepolcro, who flourished in the 16th cen-
tury. Vafari describes him as a most excellent designer; and
informs us, that he drew the whole of the Last Judgment of
Michael Angelo with such intelligence, that Perino del
Vaga was induced to purchase it at a considerable price,
and preferred it with great care during the remainder of his
life. Vafari.

CUNI, in Ancient Geography, a place of Aisa, in Ge-
drosia, according to Ptolomy.

CUNICI, a town of the largest of the Baleric islands,
which, according to Pliny, enjoyed the fame privileges with
those of Latium.

CUNICULARIUS ISULAE, islands of the Medi-
terranean, placed by Pliny between the islands of Corsica
and Sardinia. They are mere rocks.

CUNICULUS, in Zoology, a species of animals of the
lepus or hare-kind, called in English rabbit. See LEPUS
Cuniculus.

For several other species of Cuniculus, see CAVIA, MUS,
and DIPUS.

Cuniculus, in Mining, a term used by authors, in dif-
tinction from puteus, to express the several forts of paffages
and cuts in the subterranean works. The cuniculi are there
direct
dike passages in mines, where they walk on horizontally; but the portion are the perpendicular cuts or defects.

It is an observation with our miners, that the damp so much dreaded in all mines, happen generally in the horizontal cuts; but Dr. Brown, in his examination of the gold and silver mines in Hungary, observes, that they as often happen there in the potes or fractus, as in the conicum of filled. Another observation as to damp with us is, that they are most frequent in clayey and soft places under ground; but in such mines they are as frequent where the matter is hard stone; and one of the most mischievous that had then lately happened, was in a place every way surrounded with stone hard, that the tools of the miners could scarce work through it; and the damp had, in the very spot where the damp was, been made by means of gun-powder. In some of the conicum in these mines, there are damp that regularly return in certain occasions; as if the lower end of the conicum be filled up with water, certain parts in going to it are always affected with damp, which will put out a lamp or candle the moment it enters them, and often do great mischief to the miners in palling them. Phil. Trans. No. 43. See Damp.


CUNILA Multica, a name by which Piny, and some other authors, have called the wild marjoram or origanum. CUNILAGO is used by some authors for the corov. CUNINA, or CUNIA, in Mythology, a goddess who had the care of little children, attending the cradle, and watching them. There were several of her, in several countries. CUNINGHAM, Francis, in Biography, a painter, born in Scotland in the 18th century. He lived at Rome under Antonio Menesi, and afterwards travelled into Spain, France, Russia, and Prussia. He resided at Berlin in 1788. He seems to have been principally employed as a portrait painter. From his pictures are engraved, amongst others, enumerated by Heinecken, the following portraits; Frederic II. king of Prussia exuding two levrettes, a whole length, by D. Cuneo; Frederic William II., a whole length, by the fame; Frederic duke of York, by Townley; Catherine II. empress of Russia, by the fame, Heinecken.

CUNINGHAM, William, a physician and engraver, who resided at Norwich in the middle of the 17th century. In 1659 he published a work entitled "A Cosmographical Glass," for which he engraved with his own hand several plates, and amongst the rest a large map of Norway. Walpole.

CUNINGHAM, in Geography, a district of Scotland, in the county of Ayr.

CUNIO, Dianello, in Biography, a Milanese painter of the 16th century, who was the scholar of Bernardino Campi, and executed many works with the cartoons of his master, in the state of Milan. This artful, in company with Girolamo del Leoncini, known in the palace of prince Tribulst, at Malin, the most celebrated enterprizes of the emperor Charles V. He is likewise said to have distinguished himself in landscape. Orianda.

CUNIO, Ridolfo, a painter in Milan, probably a brother or near relation of Dianello Cunio. He was the scholar of Gio. Batilla Crecoi called II Cerano, and amongst other public works at Milan, painted the picture of S. Antonio in the church of S. Marcellino. His cabinet pictures, in which he introduced conflagrations or nocturnal effects, are much esteemed. He was living about 1530. Oriand.

CUNION-CHARION, in Ancient Geography, a promontory placed by Ptolemse in the S.E. part of the island of Sardina.

CUNISTORGIS, in Ancient Geography, a large town of Spain, in Lucitania, situated in the country of the people called Cunus, according to Appian.

CUNITZ, in Geography, a small town of Germany, in the
the principality of Saxe-Weimar, with 348 inhabitants, on an eminence near an ancient castle, from the ruins of which there is a most delightful view.

CUNLHAT, a small town of France, in the department of Puy-de-Dôme, chief place of a canton, in the district of Ambert, with a population of 2815 individuals. The canton has four communes, and 8810 inhabitants, upon a territorial extent of 1076.5 square miles.

CUNNERSDORF, a small town of Saxony, in Upper Lusatia, five miles from Görlitz, with a beautiful castle, and quays of very fine chalk stone, famous for its excellent wine.

CUNNINGHAM, Alexander, in Biography, was son of the Rev. Arthur Cunningham, rector of Etrick, near Selkirk in Scotland. Little is known of him till his appointment as tutor to the sons of the earl of Hyndford, and to lord Lorne afterwards John duke of Argyll. He was often consulted on political subjects, and was a zealous advocate for whig principles. In the reign of George I. he was appointed resident minister at Venice, where he remained from 1715 to 1720. From this period he was probably engaged in literary pursuits. The time of his death, like that of his birth, has never been exactly ascertained, though the former is suppos'd to have happened about the year 1737. He left behind him "A History of Great Britain, from the revolution to the accession of George I.," written in Latin, which was translated by Dr. Hadingberry, and published by Dr. Thomson in two volumes, 4to, in the year 1787. This work is spoken of as polishing much original matter, and containing many facts which had never before been brought to the light. Biog. Brit.


Gale, in his Institution of a chirurgeon, makes mention of a work written by Cunningham, and intended for publication on the venereal disease, called by him Chameleon-tract, from some fancied resemblance between persons afflicted with it, and the chameleon. It appears, from the following dialogue between two fictitious persons, Yates and Field, that the treatment of it was similar to that employed in phthisis.

"John Yates,—I judge his new invented way of curing to be extreme and dangerous to the patient, for both the fumes and ftrait order of diet with the woods, are well known to be dangerous, and yet many times doth not that which they promise. But yet, if his way be perfect, it is more to be liked, and he worthy praise.

"John Field,—His way is void of danger, easy to the patient, exact also, and perfect."

Dr. Cunningham wrote preatory epistles to some works of Gale and Halle, which drew him to have been a man of considerable learning, Atkin's Biographical Memoirs of Medicine.

CUNNINGHAM'S Islands, in Geography, an island of Upper Canada, situated at the W. end of lake Erie, S. westerly of the Baffi islands, and fartherly of Ship island.


Sp. 1. C. furmentosus. Mart. (Malaneæ; Defr. Enc. 1. Lam. ill. 1468. tab. 66. fig. 2. Anbl. Guian. 3. tab. 4.) "Leaves egg-shaped, wrinkled, tomentous underneath; racemes axillary, compound, elongated." A shrub. Stem about six feet high, and five inches in diameter, with a reddish, wrinkled, cracked bark. Branches supporting themselves by the trunks, and climbing to the tops of very large trees; branchlets numerous, very long, slender, knobly, clothed with a reddish down, many of them hanging down to within eight or ten feet of the ground. Leaves two on each knot, opposite, six or seven inches long, about four broad, entire, often a little rolled inwards; green above; reddish and downy, with prominent veins underneath; petals scarcely half an inch long; stigmas two to each leaf, acute, tomentous, caducous. Flowers small; in loose, axillary, solitary, compound, tomentous racemes, which are longer than the leaves, blueish; lamens rather long. Fruit oblong oval, smooth. A native of Guiana. 2. C. bifurcata. (Malaneæ bifurcata; Defr. 2. Lam. 1466.) "Leaves egg-shaped, acute at both ends, nearly smooth; petioles forked at their upper part; flowers unilateral." A shrub. Branches woody, opposite, obscurely four-cornered, greyish, leafy chiefly towards the top. Leaves medium long, or more, about an inch broad, opposite, entire, green on both sides; with tufts of hair underneath, springing from transparent glandular points at the axils of the nerves; petals from three to four lines long, channelled; stigmas accompanied by short whitish hairs above the place of their insertion. Flowers small, filiform, in two, but apparently unilateral rows, which are situated on each of the forks of the short, axillary, solitary common peduncles. Drupes fearfully half the use of a gravel, ovate, oval, rufous, with very short hairs. Supposed to be a native of the Caribbean islands. 3. C. nigida. (Malaneæ nigida; Defr. 3. Lam. Ill. 1467. Langeria lucida; Swartz. prod. 483.) "Leaves egg-shaped, quite smooth, shining; peduncles dichotomous." Whole plant smooth, with the exception of very small tufts of hairs, on glandular transparent points, at the axils of the nerves, underneath the leaves. Branches woody, greyish, cylindrical, with a rather uneven bark. Leaves three or four inches long, about an inch and half broad, opposite, entire, on very short peduncles; stigmas intrafollicose, ovate-acuminate, caducous. Flowers small, filiform, or nearly so, alternate, a little distant from each other on the ramifications of the common pedicels; common pedicels nearly the length of the leaves, axillary, solitary, several times dichotomous. Fruit oval, about a quarter of an inch long; nut oblong, angular. A native of the Caribbean islands. 4. C. verticillata. (Malaneæ verticillata; Defr. 4. Lam. Ill. 1465. Pl. 66. fig. 1. Anthisæ; Juss. Comm.) "Leaves unevenly egg-shaped, acuminate, whorled, generally in three; peduncles axillary, forked." A small tree. Branches woody, cylindrical, smooth, greyish. Leaves entire, smooth above, with small tufts.
tufts of hair underneath, as in the two preceding species, about two inches and a half long, and little more than one broad; pedicles about a quarter of an inch long; stipules entire, lanceolate, acute. Flowers small, sessile, unilateral, near together on the upper part of the forks of the common peduncle. Common peduncles axillary, solitary, slightly hairy, an inch long or more; calyx cloathed with short hairs; corolla hairy on the outside, longer in proportion than in the other species; anthers oblong, almost sessile. Fruits about the size of a grain of wheat.

A native of the isles of France and Bourbon.

CUNUS, in Geography, a river of S. Wales, which runs into the Tave, in the county of Glamorgan.

CUNUS, in Anatomy, the pudendum mulebre; or the anterior parts of the genitals of a woman, including the vulva pudenda, and mons Veneris.

CUNOCEPHALI, in Mythology, from κυνοκεφαλή, head, a kind of baboon, or animals with heads like those of dogs, which were wonderfully endowed; and preferred, with great veneration, by the Egyptians, in many of their temples. It is related, that by their assent the Egyptians found out the particular periods of the sun and moon, and that one half of the animal was often buried, while the other half survived; and that they could read and write. This strange history, Dr. Bryant imagines, relates to the priests of Egypt, styled achen, to the novices in their temples, and to the examinations they were obliged to undergo, before they could be admitted to the priesthood. The Egyptians, being much addicted to the study of astronomy, founded their colleges upon rocks and hills, called caph, and from their consecration to the sun, caph-el; whence the Greeks deduced κυνοκεφαλή, and from καθαρισμός, they formed κυνοκεφαλί. Caph-in-caphe was the royal lemnary in Upper Egypt, whence they drafted novices to supply their colleges and temples. By this etymology he explains the above history. The death of one part, while the other survived, denoted the regular succession of the Egyptian priesthood. As the cunocephali are said to have been sacred to Hermes, who was the patron of science, and particularly styled achen, or sindi, their college and temple were probably in the name of Hermopolis; and the cunocephali are said to have been worshipped by the people of that place. They formed a sacred college, whose members were professors of great learning; and their society seems to have been a very ancient institution. They were particularly addicted to astronomical observations; and by contemplating the heavens, styled Osiris, they learned to distinguish the seasons, and to divide the day into parts. The cunocephali are also found in Ida, and other parts of the world. Herodotus (lib. iv. c. 154.) mentions a nation of this name in Libya; and speaks of them as a race of men with the heads of dogs. In the vicinity of this people, he places the acesphali, men with no heads, but with eyes in the breast. These and the acesphali were thus denominated from their place of residence, and from their worship; the one from Aca-baphal, the other from Aca-saphal, each of which appellations is of the same purport, the right noble, or lacrimal rock of the fun. Many places were named Cunocephali; all which were eminences, or buildings situated on high, agreeably to the etymology above given. The city of Athens was so called by Xenophon; and those who speak of the Cunocephali describe them as mountaineers. There was a promontory of this name upon the coast of the Red sea, mentioned by Strabo; and another in Carcyra. Bryant's Anal. of Ancient Mythology, vol. i. p. 329, &c.

CUSONIODINES, a people mentioned by Solinus, and Sidius, and by them supposed to have the teeth of dogs.

They were probably denominated, says Dr. Bryant, from the object of their worship, the deity Chos-Abos, which the Greeks expressed Kio-Abos, and thence called his votaries Cunosides. Ibid. vol. i. p. 341.


Sp. C. capensis. Linn. Sp. Pl. Mart. Lam. Ill. Pl. 371. (Ooerdykia floribus fritiatis pentapetalis; Borm. Atr. 259. tab. 96. Arbuscula arbuti alari foliis; Pink. al. 7. tab. 191. fig. 4.) A shrub. Stem knotty, leaves towards the summit, terminated by a singular oval-oblong petiololed leaflet, which Linnmus calls a gland, although it is a much longer leaf. Leaves large, opposite, petiolate, winged; leaflets hie or feve, lanceolate, ferrated, very smooth. Racemes in terminal pairs, on each side of the singular leaflet, erect. Flowers very numerous, small, pedicelled, several proceeding from one point. A native of the Cape of Good Hope.

CUNONIA florisbus fssilibus; Buttn. Mill. ic. See Astelolyza cunonia.

CUNTLINE, in Rigging, denotes the intervals between the thongs of a rep.

CUNTUR, in Ornithology. See Condore and Vulturn Gryphus.

CUNUGUATI, Cunugales, or Nueva Ville Richt, in Geography, a town of South America, in the government of Buenos Ayres, and province of Paraguay.

CUNUSITTANI, in Ancient Geography, a people placed by Ptolemy on the E. coast of the island of Sardinia.

CUOLAGHI, or Quoyolach Bay, in Geography, lies at the south side of the entrance into Kenmare river, on the south-west coast of Ireland. At the head of it is a safe and well sheltered creek for small vessels. Long. 5° 3' 43" W. Lat. 51° 38' N.

CUOMI, a town of China, of the third rank, in the province of Chang-tong; 15 miles N.W. of Kiao.

CUOZGNE, a town of France, in the department of the Dour, in Piedmont, in Italy, which formerly belonged to Sardinia. It is the chief place of a canton, in the district of Ivée, with a population of 3250 individuals. The canton has 13 communes, and 5847 inhabitants.

CUP, Calyx, a vessel so called, of various forms and uses. In the Ephem. German, we have a description of a cup made of a common pepper-corn, by Oswald Nerlinger; which holds one thousand two hundred other ivory cups, each having its several handle, all gilt on the edges; with room for four hundred more.

Cups, among Hebrews, are those short green husks in which flowers grow; some being divided into two, three, four, five, or six leaves. See Calyx.

Cup-fountain. See Fountain.

Cup-galls, in Natural History, a name given by authors to a very singular kind of galls found on the leaves of the oak, and some other trees. They are of the figure of a cup, or
or drinking-glaafs, without its foot, being regular conic, ad-
hering by their point or apex to the leaf; and the top, 0r
broad part, is hollowed a little way.

Befide this species of gall, the oak-leaves furnish us with
several others; some of which are oblong, some round, and
others flattened; these are of various sizes, and appear on
the leaves at various feasons of the year. They all contain
the worm of some small fly; and this creature paffes all its
changes in this its habitation, being sometimes found in the
worm, sometimes in the nymph, and sometimes in the fly
in the cavity of it.

Cut flyed. See Shell.

CUPA, among the Ancients, a kind of boat, used in laying
bridges over rivers, being broad below, and narrow above.

CUPAMENI, in Botany, Rhedle. See ACANTHUS INDICA.

CUPANIA, (named from F. Cupani, a Franciscan monk
of Sicily, author of Plantae Sculpi, 1693, and Hortus Catho-
Juff. 1.49. Molinieza; Juff.248. Commers. Clafs and order,
ORTANDRIA MONOCHYRIA. Nat. Ord. Tributes; Linn. Sopplidi; Juff.

inferior; leaflets oblong, erect, (egg-shaped, acuminate, con-
cave; Sw.) Cor. Petals five, cowed at the top, upright,
(clawed, ciliate; Sw.) Stam. Filaments eight, capillary,
longer than the calyx, erect, (from the base of the corolla,
broader at the bottom, villous, the length of the petals; Sw.)
Anthers incumbent. Pil. Germ egg-shaped, (roundish,
three-cornered; Sw.) Ryle short, trifid, (at the tip, awl-
shaped, the length of the flamen; Sw.) Flagaums blunt,
(fmall, almost upright; Sw.) Peric. Capsule coriaceous,
turbinate-ovate, three-lobed, (obtuse three-cornered, large;
Sw.) Three, three-valved, three-angled. Seed foliary, (two in
each cell; Plun.) with a bell-shaped crenate aril, embracing the
seed like a calyx, (coloured, fattened to the seed above the
middle; Sw.)

61. Fl. Ind. Occ. 2. 657. (Trigonis tomentosa; Jac. Am. 102. 1.) "Leaves pinnated; leaflets inver-
ely egg-shaped, retuse, ferruginous-tomentous underneath."
A small upright tree, twelve feet high. Younger branches
and ribs of the leaves slightly tomentose. Levezs alternate,
half a foot long; leaflets usually three pairs, without an
odd one, alternate, oblong, attenuated at the base, emargi-

cated, ferrated. Racemes seven inches long, axillary, erect,
fertile. Flowers yellowish, small, numerous, on short pe-
dicels. Jacq. A native of Hispaniola, on woody moun-
61. Fl. Occ. 2. 639. (C. arborea, folis oblongis crenato-
ferratis, diffusie et alternatis fratis, ramecis laxis propen-
dentibus; Brown. Jan. 178. C. Americana; Linn.? C.
alpanelitas fructo, fructu sericeo & ramoso; Flum. Gen. 45.
Burin. Amer. tab. 110.) "Leaves pinnated; leaflets egg-
shaped, obtuse, crenate, smooth." A shrubby tree, twelve
or fourteen feet high. Leaves large. Racemes loose, droop-
ing. Brown. A native of Jamaica and Hispaniola. 3. C.
Fl. Ind. Occ. 2. 664. "Leaves pinnated; leaflets oblong,
attenuated, quite entire, februous-pubescent underneath." A
native of the West Indies. 4. C. levis. (Molinieza levis;
Willd. Lam. Ill. Pl. 305. fig. 1.) "Leaves pinnated,
in two pairs; coryms panniced; fruit inverely egg-shaped,
truncated, trigonous." Leaves abruptly pinnated; leaflets
opposite, oblone, obtuse, attenuated at the base, quite
entire. Panicle axillary, composed of small coryms. A
native of the island of Bourbon. 5. C. canecens. (Molinieza
canecens; Willd. Roxb. Corom. 1. 43. tab. 60.) "Leaves
pinnated, in two pairs; racemes panniced; fruit egg-shaped,"

Bark of the branches cinereal, scabrous. Leaves abruptly
pinnated; leaflets elliptical, rather acute, quite entire. Pa-
nicle axillary, shorter than the leaves, composed of long ra-
cemes. A native of the East Indies. 6. C. alternifolia.
(Molinieza alternifolia; Willd. Lam. III. Pl. 305. fig. 2.)
"Leaves pinnated; leaflets alternate, retuse; panicle close.
"Leaves about eight, alternate, inverely egg-shaped, very
lightly retuse, quite entire, petioled. Panicle axillary,
shorter than the leaves, composed of small coryms. A
native of the island of Bourbon.

Obf. There is much difference in authors with respect
to this genus and its species. The original cupania of
Linnaeus contained only one species, taken up by him
from Plunier, and described as a pantandous plant, with a
three-

CUPA

CUPAR, or Coupar of Fife, in Geography, a royal
burgh, and county town of Fifehire, Scotland, is seated on
the northern bank of the river Eden, near the centre of
the county.—It is also the name of a parish, which com-
prehends an area of about five miles in diameter, and is
divided into two parts by the river Eden. The borough, at an
early period, was poiffed by the thanes of Fife, who held
their courts of justice here. It is now a respectable wel-
built town, with paved streets; and is governed by a provost,
three bailies, a dean of guild, and thirteen councillors.
Among the public structures of the town, the church, with
a handloom spire, is prominent. Next to which is the court-
room and town-hoose; but the public gaol for the county
is reprobated by Dr. Campbell, in his communication to

John
John Sinclair, as men, filthy, and, in every respect, different to the character of the place and of the district. In Cupar and its neighbourhood, a considerable quantity of coarse linens is manufactured; and it is stated, that "about 500,000 yards are annually flamped" in this town. The linen merchants are paid to buy annually about 45,000l. to the manufacturers. In the year 1794, 223 looms were employed in this business. These are also some considerable tan-yards, and a bleach-field; also brick and tile-fields. In the year 1800, Cupar contained 750 houses, and 4453 inhabitants. Sinclair’s Statistical Account of Scotland.

Cupar, or Copper of Angus, so named, to distinguish it from Cupar in Fife-shire, Scotland, is a considerable town and parish, situated in the valley of Strathmore, and lying partly in Angus, and partly in Perthshire. The parish occupies an area of above five miles in length, by one in breadth, and contains nearly 2400 acres. The lands are moilly inclosed; and agriculture has been progressively improving for the last twenty years. In the parish are five mills, and a considerable linen manufacture, the extent of which may be partly estimated, when it is known, that in the year 1792 there were 97,810 yards of brown linen flamped here. At the bleach-field of Balgillo, about 200,000 yards are annually whitened. The population of the parish, in 1793, according to the report in Sir John Sinclair’s statistical work, was 2076, "an increase of 585 within the preceding forty years. According to the reports of 41 Geo. III. A. D. 1809, the parish then contained, in the Perth division, 420 houses, and 2169 inhabitants; and in the Angus division 59 houses, and 247 inhabitants; making a total of 570 houses, and 2416 persons. In the parish are the velvets of an encampment, of a square form, comprehending about 24 acres, and said to have been formed by the army of Agricola, in his seventh expedition. (See Roy’s Military Antiquities.) Within the vallum of this fortress, Malcolm IV, in 1142, founded, and richly endowed, an abbey for Cistercian monks. Parts of the building remain.

The town is seated on a rivulet, which divides it, and also the counties. It is 12 miles from Perth, and nearly the same distance from Dundee. Here are a weekly market on Tuesday, and four annual fairs. In the year 1751, a tannery was formed here, and has produced so much, as to turn out, in one year, 2060 hides of leather. The town has gradually improved; and its fountains are provided with lamps and pavements. Sinclair’s Statistical Account of Scotland.

Cupella, a town of Euphrasia Turkey, in the province of Moldavia, 20 miles N of Suceava.

Cupel, or Cupellation, in Chemistry. Cupellation is a process employed in the affray of gold and silver, by which the alloy, or base metal, with which any sample of the noble metals may be mixed, is separated, and its proportion ascertained. The rationale of this process is founded on the following facts.

Of all the metals hitherto discovered, three alone (namely, gold, silver, and platinum) are incapable of being oxidised or ruffled by mere exposure to air, either when cold or in fusion; and hence gold and silver anciently acquired the name of noble metals. All other metals tarnish and are oxidised when kept in fusion in open vessels, (some with extreme cælæ, others not without difficulty,) so that by constantly removing the fluid of oxyd as it forms, and exposing fresh surfaces to the air, the whole metal may be finally changed into oxyd. Hence when a mixture of a noble and a base metal (or in other words, of a metal unchanged, and of one oxydable by fusion,) are melted and exposed to air, the base metal gradually changes to an oxyd, and is thrown off in the form of coloured or glasy pellicles, and the noble metal remains unaltered. This separation, however, is not in all cases equally accurate, for where the alloy or base metal is not very easily oxydable, and where the proportion of the alloy to the noble metal is but small, the affinity which the latter exercises towards the former is so great, and increases so much with the decreasing proportion of the alloy, as to protect it completely from any further action of the air, and to preserve it in the metallic state. Thus, for example, if a mixture of equal parts of silver and copper are kept in fusion in an open vessel, a crust of brown oxyd of copper readily forms, which, if removed, is succeeded by other crusts that continue to be produced, but with increasing difficulty, till the copper is only about a twelfth of the mass; but after this point scarcely any continuance of heat will compleat the oxydation of the remaining portion of the alloy.

The name, however, does not take with lead when alloyed with silver, for on fusing the mixed mists the lead speedily oxydates on the surface, and at the same time vitrifies into litharge, and if this is removed, every particle of lead may be thus extracted, and the silver alone left behind perfectly pure.

Now it is found that when a triple alloy of silver, copper, and lead, is mixed together (the quantity of lead being several times greater than that of the copper) the oxydability of the copper is so much increased by the presence of the lead, owing to the affinity of the two oxyds, and the solubility of the copper oxyd in that of the lead when in fusion, that the silver is no longer able to protect any portion of the copper from oxydation, and the whole alloy is removed from the noble metal, even to the last fusible particle.

This, therefore, is the principle on which the process of cupellation is founded, namely, that of mixing the alloyed noble metal with a considerable portion of lead, expelling the whole to a melting heat with access of air, and thus converting an oxyd both the lead and every other base metal present in the mists, till the noble metal is left behind perfectly pure.

This process is performed both in the large way in extracting silver from the ore and refining it, and in the small way in affraying those mixtures of gold and silver with different alloys which are used in such large quantities for plate, coin, &c. &c. The former, indeed, is technically called refining, and the latter only cupellation, and some little variation in the management of each takes place, but the principle in both is precisely the same.

Cupellation is usually performed in a furnace contrived for the purpose, and capable of giving a pretty intense heat. The body of the furnace is a hollow four-sided prism, in the middle of which is fixed an earthen vessel called a muffle, of an oven shape, vaulted at top, entirely open at one end, and with a flat floor at bottom. The open end of the muffle comes in close contact with a corresponding hole in the side of the furnace, and is luted to it, and the closed end projects as far as the centre of the furnace. By this contrivance the muffle is heated by the fuel round it, whilst not a particle of the burning charcoal can fall into its cavity, and a gradual heat is also obtained within it, being the most intense at the closed end which is in the centre of the fire, and least at the open end contiguous with the hole in the side of the furnace. The cavity of the muffle being large in comparison with the vessels which it is to contain, a considerable body of heated air is constantly circulating over the melted metal, which is necessary to keep up the constant oxydation of the lead and alloy on which the process of cupellation depends.

But as it would be nearly impracticable to keep up the requisite
CUPEL.

For the asy of silver a clean piece of the metal is taken, which is not more than 36 grains, and left if the alloy appears abundant, is laminated, and weighed with the utmost care. It is then wrapped up in a piece of sheet-lead of the proper weight, or both the silver and lead are folded in paper ready for use. The purity of the lead is important; for lead naturally contains a little silver, which, if not removed, might make a sensible error in the assay. The lead is, therefore, always refined from litharge; in which state it is remarkably pure, and contains no more than 4 grains of silver in the pound, which quantity may be entirely neglected.

The mode of proportioning the quantity of lead to the estimated quantity of alloy in the silver will be presently noticed.

The fire being kindled, and the floor of the muffle sprinkled with chalk, to prevent the cupels from being glued to it in the process, the muffle and empty cupels are first made fully red-hot, and the cylinders of charcoal are put against the open end of the muffle, as already described. The silver and lead are then dropped into the cupel, and the charcoal replaced. The metals immediately melt together; and, when red-hot, the following appearances take place. The melted globule begins to send off dense fumes, which rise to the roof of the muffle, and at the same time a thin stream of red fused matter is seen conflantly flowing down the sides of the globule to the surface of the cupel, through which it sinks. This fume is the oxid of lead evaporated by the heat, and the stream of fused matter is the melted litharge, together with the copper or other alloy of the silver which is thus extracted from it. In proportion to the intensity of the heat are the density of the fume, the difference with which it is given off, and the rapidity with which the melted oxid circulates, as it is termed, or falls down the sides of the metal. As the cupellation advances, the melted globule becomes rounder, and its surface more fiery, till, in about fifteen or twenty minutes, according to circumstances, all the lead and alloy are vitriolated and absorbed by the cupel, the last portions of litharge collect in large bright streaks, which disappear with great rapidity, flowing the melted metal beneath bright with iridescent colours, which suddenly after becomes opaque, and exquisitely white and brilliant, exhibiting the clean surface of pure melted silver. This last appearance is called the lightening of the metal, and it is highly beautiful, as if a red curtain was suddenly withdrawn from the metal. The operation is now finished, and the cupel is drawn forwards to the open side of the muffle, that it may cool gradually before it is removed; for, if it were suddenly fixed, the globule is apt to shoot into an arborecent surface in the act of congealing, by which small particles are thrown out of the cupel and lost, and the assay is spoiled.

In the cupellations made at the mint assay-office, two assays are made of the same metal, and no sensible difference between the weight of the two buttons is allowed to pass, as ascertained by scales, that turn with the troy weight of a grain.

The process is considered as well performed when the button of silver adheres but slightly to the cupel; when its shape is very considerably globular, and not flattened at the margin; when it is quite white, clean and brilliant, and not foiled or spotted with any remaining litharge. In this state of purity, the surface of the button is never quite smooth, but is somewhat finely or fibrated, the effect of a very strong tendency to crystallization, which perfectly pure silver possesses, but is not found in plate or alloyed metal. Under the microscope, this irregularity of surface is still more observable, and the scales seem to incline to a pentagonal form.

Where the alloy of the silver is only copper, as is usually the case, the cupel round the button is stained of a brown grey.

The management of the fire in cupellation is of great importance. If it is so intense that the cupel can scarcely be distinguished from the muffle, and the fume of litharge can hardly be discerned through the dazzling heat, not only much of the lead is volatilized to mere waist, but even a portion of the silver is carried off along with it, which renders the assay inaccurate. Even silver alone, and in the greatest purity, may be evaporated by intense heat as M. Tillet (an ingenious French chemist), and waster of the mint at Paris, found, by an experiment, in which a button of pure silver was intensely heated for two hours, and had lost thereby no less than 1/3 of its weight. If one cupel is inverted over another that contains the silver, in this case the inside of the upper one is found studded with minute globules of silver, when viewed through a common lens. On the other hand, when the fire is too slack in cupellation the litharge is not fully melted as it forms, and, therefore, is not absorbed by the cupel, but lies on the surface as a red scoria, and the circulation is very sluggish. The proper medium of heat is, when every thing within the muffle is fully red-hot; when the
the fume of litharge is abundant, and visibly rises to the top; and when the circulation goes on rapidly, and the button continues very globular. Towards the end of the process, the heat should be increased as the button, by the conjunct abstraction of the lead, becomes constantly less visibly fusible.

It has been already mentioned, that in cupellation all the alloy of the silver is carried down into the cupel along with, and diffused in the litharge, provided lead enough be used. But it was also found by M. Tillett, that a small portion of the silver is at the same time carried with the lead; so that, when perfectly pure silver is cupelled with lead of known purity, the button of silver left after the process never weighs quite so much as before, even though the heat employed is to moderate as not to volatilize any of the silver. As a proof that some of the silver is carried down into the cupel, M. Tillett ground this veil of powder, and fused it with a reducing flux, whereby he recovered nearly all the lead that had been used, and which now contained ten times as much silver as its natural retent of this noble metal, nine tenths of which, therefore, must have been derived from the button of silver during cupellation. Accordingly, on cupelling this lead, per lb., it left behind all this excess of silver, and now only carried down its natural retent, which amounts to about 1/47th or half a grain in a pound French.

It remains to give the proportions of lead to alloy, which have been found the most useful in cupellation, and the method of estimating the quantity of alloy previous to this operation, with sufficient exactness to guide the artist. The ancient assayers used for this purpose small flaps or bars of metal, made with pure silver and copper, in known proportions, in a regularly increasing series, from the lead to the greatest quantity of alloy usually required. These bars of metal were called touch-needles; and, by comparing the silver to be assayed with these needles, in colour, tenacity, and other external marks, its proportion of alloy was gauged at sufficient accuracy to determine the quantity of lead required in the cupellation. These needles are now, however, almost totally diffused in silver-assaying, as an experienced assayer is able to judge of the fineness of silver, with quite sufficient accuracy, by the ease with which it is cut, the colour and grain of the fresh-cut surface, the malleability, the appearances in being heated red-hot, and other tokens.

The proportion of alloy (if copper) to the silver being found with sufficient exactness, that of the lead is thus estimated. Copper, when taken by itself, requires from 1 to 1 1/2 times its weight of lead for complete feconization on the cupel. But all admixtures of fine metal tend to protect the copper from the action of the litharge, the more, in proportion to the quantity of fine metal. Thus, when one part of copper is mixed with three of silver, no less than 40 parts of lead are required; and one part of copper with 11 of silver require 72 parts of lead. It should be observed, however, that a considerable difference in the respective proportions of lead to copper is observed by different assayers, though the general principle of increasing the lead in proportion to the quantity of fine metal is indisputable.

The following table will shew some of the proportions used in the French mint, as given by M. Tillett, and also others used by the German chemists, as given by Gren:

<table>
<thead>
<tr>
<th>Copper</th>
<th>Silver</th>
<th>Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>1</td>
<td>1/4</td>
<td>17</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>28</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>20</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>29</td>
</tr>
<tr>
<td>1</td>
<td>7</td>
<td>30</td>
</tr>
<tr>
<td>1</td>
<td>11</td>
<td>48</td>
</tr>
<tr>
<td>1</td>
<td>15</td>
<td>64</td>
</tr>
<tr>
<td>1</td>
<td>23</td>
<td>96</td>
</tr>
<tr>
<td>1</td>
<td>30</td>
<td>128</td>
</tr>
</tbody>
</table>

**Cupellation of Gold.**

The process of cupellation is the same for gold as for silver, the alloy; in both instances, being worked off by lead; but several curious circumstances take place with mixtures of gold with other metals, which are not easily explicable. When pure gold is mixed with lead and cupelled, the whole of the lead is not separated, as it is with pure silver, but a small portion remains combined with the gold sufficient to impair its colour and ductility. If, besides gold and lead, the mixture contains copper to the amount of 1/4 of the gold, the whole of the lead will now be separated in cupellation, but almost the whole of the copper will remain. If, in addition to the above ingredients, the alloy contains a somewhat greater proportion of silver than it does of copper, this latter is separated by cupellation, but a little of the lead remains. But if the amount of silver equals or exceeds that of the gold, all the lead and copper are separated, and only the gold and silver remain.

As, therefore, the object of cupellation is to separate the whole of the alloy of base metal, it is necessary, in assaying gold, to add first a very considerable quantity of silver, then to work off the copper, and other base metals, by lead on the cupel, and afterwards to separate the gold and silver by the process of paring, as it is called, by means of nitric acid.

The assay of gold, therefore, is more complicated than that of silver, and requires the intervention of this latter metal. The quantity of silver, as already mentioned, be at least equal to that of the gold, to enable the lead to extract all the copper in cupellation; but, in fact, the silver is generally three times as much as the gold, otherwise, though all the copper may be removed by a much less proportions, the subsequent separation of the silver from the gold by nitric acid cannot well take place. For it is found that, unless the silver be in this large quantity, the gold, which is not itself touched by the nitric acid, also protects a portion of the silver from the acid, and the separation is not complete.

The cupellation of gold is therefore conducted in the following manner: the quantity of copper or other alloy present, being first estimated as accurately as possible in the way that will be presently mentioned, as much fine silver is added to the mixture, as will make the gold only a fourth of the mass when the base alloy has been removed. If the gold is already alloyed with any silver, a proper allowance is of course made for the estimated quantity. This proportion of the silver to the gold, and melting them together, is called quantation, the gold being reduced thereby to one-fourth of the mass of noble metal. To the mixture the requisite quantity of lead is then added (which is nearly the same as in silver assaying) and the cupellation is conducted exactly in the same manner, only that a higher heat may be given, as the silver in this mixture is not volatilized by a strong fire, as it is in mere silver assaying. The lighting takes
takes place here also when every particle of lead and other base metal is removed, and only the gold and silver are left on the cupel.

The separation of these noble metals by nitric acid, and the exact process of parting, will be described under Gold. It may be just mentioned, however, that the button is first flattened, and then rolled out into a small coil, and then put into a glass, and with boiling nitric acid, by which all the silver is extracted, and the gold alone is left behind in perfect purity.

The quantity of alloy in any mixture of gold with other metals is estimated previous to cupellation, partly by the general appearance (the nature of the alloy being known) and partly by the use of the touchstone. In judging by the general appearance alone, much advantage may be derived from touch-nedles, but the cale is more complicated here than in silver alloying, since three metals at least are concerned in gold alloying, namely, gold, silver, and copper. Therefore if these needles are used, there must be several sets of them adapted to the nature of the alloy.

The trial by the touchstone is another simple and very ingenious method of forming some estimate of the proportion of alloy in any gold mixture. For this purpose the piece of metal to be tried is rubbed hard upon a piece of black basalt or black pottery, so as to make a broad bright metallic streak by the abrasion of some of the metal. This shows at once the true colour of the alloy, which may also be compared with another streak made by a touch-needle beside it. A drop or two of nitric acid is then spread upon the streak, and after remaining about ten seconds, it is washed off, and the effect observed. If the streak preserves its golden colour unaltered, the metal is judged to have a certain degree of fineness, as gold is insoluble in this acid; if it looks red, dull, and coppery, it is left free; if the streak is almost entirely effaced, the metal contains very little gold; and thus by the assistance of this acid, an experienced assayer will come at a sufficiently accurate knowledge of the quantity of alloy to guide him in the addition of lead and silver in the cupellation. It is found however that though pure nitric acid will readily dissolve copper finely, it will not act feebly on this metal, when in mixture with twice its weight of gold, so effectually does the gold protect the copper against this powerful acid. But if a small proportion of muriatic acid is added, the copper will be dissolved when the gold is not more than three-fourths of the mixture, and thus the power of this test is much extended. Vauquin, in his "Manuel de l'Assayeur," recommends for this purpose an acid composed of 6 parts of nitric acid of 1.54, 2 parts of muriatic acid of 1.173, 2 gr., and 25 parts of water. This does indeed compose a nitro-muriatic acid, which is the proper solvent for gold, but the gold on the touch-stone is not in this case feebly acted on, owing to the shortness of the application, and the very small proportion of muriatic acid.

Touching is also of great use in determining the value of wrought trinkets which cannot bear so much as 8 or 10 grains for a regular assay.

Cupellation of Alloys of Platina.

On account of the great specific gravity of platina, it was long apprehended that gold might be adulterated with it to a considerable degree without being easily detected, for as platina is equally un oxydable by air as gold and silver, it cannot be scorch'd by lead on cupel, and being insoluble in nitric acid its separation from gold is not readily effected. It is not difficult, however, to detect this metal when mixed with gold or silver even in very small proportion.

Gold allowed with so little as one per cent. of platina and cupelled in the usual way, with thrice its weight of silver, differs from gold and silver alone in requiring a much greater heat for cupellation and complete fusion of the button; otherwise, when all the lead is worked off, the button remains flat, like a piece of money, and its surface drollier, and especially it appears remarkably crystallized on its surface. Also in cupellation, when the flat portions of lead are worked off, the button appears pearly, scarcely iridescent, and does not lighten, or become suddenly brilliant as silver and gold alone, or gold and silver do.

Silver bears alloying with platina better than gold does; but this is never done fraudulently. When the platina does not exceed 5 per cent. of the silver, it works easily on the cupel, but the lighting is less observable than with pure silver, and, in particular, the property of crystallizing is still more conspicuous. When the platina amounts to a quarter of the mixture, the button or cupel flattens, and becomes pearly even before all the lead is run off, and its surface shoots up into knobs which, when seen by a magnifier, appear clusters of cry stalline points.

Some remarkable occurrences take place with the alloys of gold or silver with platina, when treated with nitric acid, which will be mentioned under that metal.

CUPER, GILBERT, in Biography, was born in the duchy of Gueldern, in 1644: his early education was at Nim- genen, and he finished his studies under Gronovius at Leyden. At the age of 25 he was appointed professor of history at Deventer. He was also raised to the principal offices of the magistracy of that city. Here he died in 1716. He published many works of considerable merit; particularly "Observations on various Greek and Latin Authors," "A Collection of ancient Monuments relative to Egypt," "An Explanation of the Apotheosis of Homer," and "A History of the Three Gordians." He maintained a friendly correspondence with the principal literary characters of his time, by whom he was highly esteemed, on account of his great learning. He was elected foreign member of the academy of inscriptions at Paris. Moreri.

CUPERIUM, in Ancient Geography, a place of Thrace, in the vicinity of Zurile.

CUPERTINO, in Geography, a town of Naples, in the province of Orotara; 54 miles N.E. of Nardo.

CUPHA, in Ancient Geography, a river of European Saxonia.—All., a town of Africa, in Libya, placed by Ptolemy near the Niger.

CUPHA, or KUPHA. See CUPA.


Gen. Ch. Cal. Periantha one-leaved, tubular, striated, five or fixed-toothed, upper tooth broader, permanent. Cor. Petals five or six, inserted into the throat of the calyx, the two upper ones larger. Stam. Filaments ten or twelve, in three ranks, unequal, two of them shorter and more hairy; anthers roundish. Pyl. Geran egg-shaped; style permanent. Peric. Capsule oblong, one-celled, valves covered by the calyx, and burrowing irregularly with it by the enlargement of the receptacle of the seeds. Seeds from five to ten, lenticular, crenate, attached to the filiform lateral branches of a column, triquetrous, free, cartilaginous receptive.

Eff. Ch. Calyx five or fixed-toothed, unequal. Petals five or six, unequal, inserted into the calyx. Capsule one-celled; receptacle triquetrous.

1 Sp.
Sp. C. echinatus. Jacq. hort. 3. 8. Pl. 177. Lam. Pl. 277. Herb. tab. 44. fig. 9. (Lythrum cuprea; Linn. jun. Supp. 247. Balssimia Pinot; Vandell. fusc. 177. tab. 3. Root annual. Stem a foot high, cylindrical, erect, pubescent-viticos, purplish, branched. Leaves opposite, veined, ovate-oblong, quite coarse, even-furrowed. Flower purple, lateral, solitary, on short peduncles; calyx swollen at the base, pubescent-viticos; stamens a reflexed scale within the gibus part of the calyx. Calyptra bursting longitudinally by the protrusion of the lengthened receptacle, loaded with the unpinned seeds, which come to maturity in the open air. A native of moist shady ground in Brazil. It is readily raised from seed in our botanical gardens.

CUPID, in Mythology, one of the companions of Venus, and the god of love. The Cupids were anciently supposed to be very numerous, and accordingly they were the offspring of different parents; but there were two which were the chief, viz. Eros, the son of Jupiter and Venus, who delighted in inspiring his votaries with refined sentiments of virtuous love; and Anteros, of inferior, and, indeed, contrary character; the descendant of Mars and Venus, or, as some say, of Zephyrus and Nax. The former is said to have been the cause of love, and the latter is represented as the cause of its ceasing; and, therefore, the antiquarians at Florence call the two little Cupids at the foot of the Venus of Medici by the names of Eros and Anteros; and in the air of their faces, and also in their form and attitudes, there is something that corresponds with these names; the upper one being lighter, and of a more pleasing aspect, and the lower one more heavy and fallen. Their darts are of a different nature; that of Eros golden, which procures love; and that of Anteros leaden, which causes hatred.

Cupid is commonly represented as a child, with soft and fine hair, almost always naked, of a good shape, inclining to plumpness, and furnished with wings, a bow, quiver, and darts, and sometimes with a lighted torch. The ancient artists and poets represent Cupid either as idle and playful, or as very powerful, and governing all things, as that Venus, without his assistance, is weak and impotent. Thus Virgil, Æl. 1. 668.

"Nate, mea Vires, mea magna potestas, folae!"

sometimes carefree, and sometimes tormenting the goddess Pysche, or the soul, riding in a car drawn by two Pysches, or by two butterflies, riding on a lion or a daphnium, &c.

The famous flatyary Praxiteles, who flourished about the 14th olympiad, B.C. 344, acquired great honour, by his statues of Cupid. The orations of Cicero against Verres have given celebrity to the marble Cupid, which the orator represents as a rival to one still more famous by the same artist, that formed the pride and the wealth of the Thebians——a statue purchased by Memmius, when he plundered the cities of Greece. We learn from Pausanias, that this marble Cupid of Praxiteles, which was the idol of the Thebians, perished (after a variety of adventures) in a fire at Rome. It has been said that the marchioness of Mantua possessed, in the year 1573, the Cupid of Praxiteles, and the sleeping Cupid of Michael Angelo; but against this fact the testimony of Pausanias has been alleged. Nevertheless, though the Thebian statue suffered the fate reported by Pausanias, the marchionesses might possess another Cupid executed by Praxiteles; because it appears that there existed two marble Cupids of acknowledged beauty, by this illustrious sculptor; and among the statues described by C. Illyratus, two Cupids, by the same artist, in bronze, are celebrated as works of exquisite perfection. Of one of these, perhaps, the following epigram was written; though Junius imagined that it was composed on the Thespian Cupid, and that the poet has taken the liberty to turn the marble into brass. We shall subjoin a verified translation of this Greek epigram, translated into Latin by Grotius, from Mr. Hayley’s "Essay on Sculpture."

"Julian, the Egyptian prefect, on the Cupid of Praxiteles."

"Praxiteles, proud slave of my command, Thus I made my statue with his letter'd head, Me, couch'd within him, he in bronze portrayed For Phryne, who with love the gift repaid. She made her captive mine. To hearts that burn, Love is for love the only just return."

CUPIDO, in Ornithology, a species of Tetrao; see CUPID, in Geography, a town of Servia, on the river Save; 4 miles S.S.W. of Belgrade.

CUPIS, Jacobus, in Biography, a painter of quadrupeds, living in the 17th century. From the compositions of this artist R. Perlyn engraved 13 plates, which were published by N. Viefher in 1541. Heimcken.

CUPOLA, in Architecture, the name with done.

The word is Italian, formed on the barbarous Latin cupola, the wife called chola, and formius.

CUPPEDE, in Ancient Geography, a place in Mytis, situated, according to the Itinerary of Antonine, in the route from Nocemedia to Viminarum.

CUPPING, in Surgery, is one of the modes of inviting blood to a particular part of the body, by means of a vellip named a CUPPING GLASS; and it is us'd, after the application of this instrument, to employ scarifications, for the purpose of extracting the accumulated fluids. The comparative advantages of local and general blood-letting are elsewhere explained. (See the articles BLEEDING and SCARIFICATION.) The operation of cupping is by no means difficult; but in large cities it is very much confined to a particular class of practitioners, named Cuppers, who extract blood in this way with great facility, sometimes to the quantity of a pound in fix or seven minutes. Cupping was practised by the ancient Greeks, Romans, and Syrians, and the figure of a cupping-apparatus may be seen in the surgical works of Albucasis; though the methods, formerly in use, were not nearly so convenient and effectual as those employed by the moderns.

When a cupping-glaf is applied alone, without scarifying the part, this operation is named dry cupping; and it is had recourse to where we desire to produce a greater flow of blood to a part than is usual, or to draw the blood into women's breasts, or to elongate their nipples, &c. The immediate effect of cupping any part is, to produce the superincumbent weight of the atmosphere upon it, and thereby to occasion a relatively greater degree of preasure on the adjacent parts. The blood is thus urged into the small arteries and veins, so as to produce a considerable redness under the cupping glafs, at which place the skin is also much elevated, and rather inflamed.

The exhaustion of the air from the cupping-glass is generally effected either by an air pump, or by the flame of a wax taper; but the latter mode is now commonly preferred, and is much the most expeditious method. When blood is to be drawn, we first use the glafs, and apply the scarificators immediately after its removal; then, again, fix the glafs on the same spot, and leave it there till the blood has flowed freely. To remove the glafs, it is only necessary to raise one edge of it a little, so as to admit the air; and after every removal, the skin should be wiped clean with a sponge and warm
warm water, to keep the clarified surface in a flat plate for a renewal of the bleeding. If more than six or eight ounces of blood be intended to be extracted, several glasses, and as many clarifications, will be required; and the depth of the punctures must be in proportion to the quantity of blood demanded, unless the structure of the part forbids our making any other than very superficial wounds. No other coagulation is required after cupping, than a piece of fine old linen.

CUPPING-Claye, is a vessel formed somewhat like a bell, applied to several parts of the body, in performing the operation above described. Among the ancients, this instrument was composed of horn, wood, brafs, silver, &c. When a cupping glass is to be used with an air-pump, for exhausting it, a small aperture is left in its upper part, which is covered with a valve; but when the air is to be excluded by the flame of a lamp, &c., it must be entire at its upper part, and open at the bottom only.

CUPPI, in Geography, a town of Sweden, in the province of Finland.

CUPRE, or CUPPA, in Ancient Geography, a maritime town of Italy, in the Picenum. Ptolemy places it between Trento and Matrinum. It is thought to be the present St. Benedetto. Ptolemy also points out another town of this name, in the interior of Picenum, on the mountains beyond Trento, supposed to be the present Loretto.

CUPRESSETUM, a place of Asia, in Affyrnia, near the river Capr, according to Strabo.

CUPRESSO-PINUS, in Botany, Breyo. See BRUKEN NADIFLORA.


Gen. Ch. Male flowers about twenty, disposed in an egg-shaped catkin, Cal. Scale rosmulufi, acuminate, concave, pelted, peltate. Cor. none. Stam. Filaments none; anthers two or four, oval, rounded, one-celled, adnate to the base of the inner side of the scale. Female flowers from eight to ten, clustered into a small, short cone. Cal. Scale egg-shaped, thickish, spreading, Cor. none. Pijl. Sperally discernible; but at the base of each scale there are several points which appear to be germis, with simple or double felise stigmas. Peric. A floreole; scales thickened, at first flut, afterwards expanding, orbicular, angular, generally peltate, convex and amoll pointed on the outside; a little concave within, appearing like the heads of nails. Seeds several, small, oblong, angular.


* Leaves adnate, imbricated on the small branches.


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fat, 1100 years, as fresh as new, when pope Eugenius IV, ordered gates of brass in their head. Some maintain that the wood, _gopher_, of which Noah's Ark was made, was cypress; and Plato preferred it to brass itself, for writing his laws upon it. On account of the gloomy hue of its leaves, especially in winter, it was esteemed by the ancients a suitable ornament of their burial places, was sacred to Pluto and Persephone, and was used at the funerals of perfum of fashion. Hence, with the poets, it obtained the epithets atro, funebris, funebri, and infernal. It was introduced into England about two hundred and fifty years ago, according to Turner, and is still found in old gardens. It has been strongly recommended by Evelyn and Miller, as worthy of more general cultivation in this country, for the sake of the valuable qualities of its timber, which would as soon come to perfection, and prove as profitable as that of the oak. Evelyn prays it for its hardiness; but professer Martin observes, that it has never been planted in any considerable quantity among us, evidently because it cannot resist the attacks of our winter frosts and spring blights. Its wood, having a pleasant smell, taking a fine polish, and not being liable to be eaten by insects, is esteemed for cabinet furniture and other similar purposes. It was used by the Greeks, in the time of Thucydides, for the coffins of their eminent warriors; and many of the chinks which enclofe the Egyptian mummies are made of it, affording a decisive proof of its almost incorruptible nature. 2. _C. glauca._ Glauous or Portuguese cypress. Lam. 2. (C. Isfaniaca; Willd. 2. Tourn. 587.; Duham. Arb. 1. 198. Mill. Dict. C. pendula; Mart. 5. L'Herit. Strip. 15. tab. 8. Hort. Kew. 3. 373.) "Leaves acute, glauous, glandular, imbricated in four rows; branches hanging down." Lam. "Little branches quadriangular; leaves imbricated in four rows, adpressed, glauous, keeled; strobiles somewhat globular; branches pendulous." Willd. A small tree, known at first sight by its glaucous foliage and pendulous branches. _Leaves_ small, lanceolate, acute, adnate in their lower part, opposite, with a glând, or rather reniform hollow on the back; thence on the lower branches in somewhat distant pairs, dryish, fulfil, and rather prickly. _Flowers_ similar to those of the preceding species, but smaller; male catkins simpler and more elegant. _Cones_ about the size of a common cherry, blueish before they become dry. _Seeds_ short, almost orbicular, compressed, angular. A native of the East Indies, on the coast of Malabar; but has been long naturalized in Portugal, where it grows to a considerable timber-tree, though in England it is not more than fifteen feet high. It has been cultivated here more than a hundred years; but being rather tender, is now a rare plant in our gardens and plantations. 3 _C. pendula._ Lam. 4. Willd. 4. Thunb. Jap. 25. (Furono; Kempf. Amm. 883.) "Leaves opposite, egg-shaped; little branches dichotomous. pendulous." A tree not more than six feet high, erect, and entirely smooth. _Branches_ alternate, lax, leafless, very compound; little branches bifurcated, covered with leaves, long, lax, spreading, altogether pendulous. _Leaves_ deccipat, imbricated, egg-shaped, with a point at the end which bends a little outwards, very short. Observed by Thunberg, but without fructification, on the mountains of Japan. 4 _C. thyoides._ White cedar, or arbor viti leafed cypress. Linn. Sp. Pl. 2. Mart. 3. Lam. 3. Willd. 5. (C. sana mariana; Pook. Mant. 61. tab. 345. fig. 1.) "Leaves imbricated; fronds two-edged." Linn. "Leaves imbricated, close pressed, with a single gland on the back; fronds flattened, turned different ways." Lam. A small or middle fixed ever-green tree, naturally forming a regular elegant head. _Branches_ not pendulous; little branches flattened, not placed in the same plane as in the arbor vitae, but flanging two ways. _Leaves_ of a delicate green colour, small, opposite, imbricated in four rows on the little branches, with their point close to the branch. _Flowers_ of the male catkin, according to L'Hertier, with pedicelled, not pedate scales, and only two anthers; of the females, with two stigmas. A native of North America, China, and Cochin-China. In the English gardens it seldom rises much higher than fifteen feet. Loureiro states that in China it is not more than eight feet high; but in North America it is considerably larger, and is used for posts and rails, but does not lift us the ground so as what is there called reed-cypress (juniperus Virginiana). Canoes and even houses are made of it; but it is most esteemed for thingles. It was first introduced into England by Peter Collinson, in 1736. 5 _C. columensis._ Mart. 7. Forl. Fl. Austr. n. 351. "Leaves imbricated, awl-shaped, furrowed; strobiles cylindrical, elongated." A native of New Caledonia and Norfolk island.

**Leaves free, detached, more or less open, not imbricated.**

6 _C. juniperoides._ African or Cape cypress. Linn. Sp. Pl. 4. Mart. 4. Lam. 5. Willd. 7. "Leaves opposite, decipat, awl-shaped, spreading." _Branches_ loose, spreading. An old tree, 75 feet of a light green colour, continuing in verdure all the year. _Cones_ black when ripe. A native of the Cape of Good Hope. 7 _C. japonica._ Linn. jun. Supp. 401. Mart. 6. Lam. 6. Willd. 5. Thunb. Jap. 205. (C. chinensis.) Gart. tab. 91. fig. 5. Lam. Ill. Pl. 787. fig. 2. "Leaves in four rows, fickle-shaped, comprised, furrowed, decurrent." Thunb. A very lofty, straight tree. _Leaves_ resembling those of the spruce fir, or rather those of yew, larger than in the other species, in three or four rows, not opposite, numerous, linear, acute, bent inwards, with four longitudinal furrows, green and somewhat shining above, marked with two whitish frets underneath, an inch and half long, and little more than a line broad. _Male catkins_ several together in a terminal spike, with intermediate leaves, egg-shaped, obtuse, smooth. _Female_ fimbriates solitary, few, globular, on the lower branches; scales peltate, coriaceous-membranous; variably angular below, cleft above into three or four membranous lanceolate-acuminate, erect segments; the anterior part finally extended into a long, acuminate, keeled, recurved beak; peduncle thick, friated, curved. _Nuts_ four or six in each scale, united in pairs, inverely egg-shaped, lenticularly comprised or angular, surmounted with a very narrow membranous edge. _Seed_ somewhat cylindrical, black. The wood is soft, and yields readily to the tool; on which account it is much used for cabinets, and other furniture, that are varnished or japanned. If it be kept some time under ground, and then macerated with water, it takes a blueish colour. 8 _C. dillenii._ Deciduous cypress. Linn. Sp. Pl. 2. Mart. 2. Lam. 7. Willd. 3. (C. americana; Cassel. Car. 1. 11. tab. 11. C. virginiana, lobia acacea decidua; Comm. Hort. 1. 113. tab. 59. Duham. Arb. 1. 198. tab. 83. Pook. Alm. 125. tab. 85. fig. 6.) "Leaves in two rows, spreading." Linn. "Leaves linear, in two rows, deciduous, spreading." Linn. One of the largest trees in North America, sometimes seventy feet high, thirty feet in circumference at the surface of the ground, and twenty at the height of six feet. _Branches_ extending almost horizontally. _Leaves_ acute, in two rows, and very near together on the little branches, whence they have been compared to the leaves of acacia by some of the older botanists, who mistook the little branches for common petals, and thought the leaves winged; whereas they are distinctly simple, about half an inch long, flat, slightly curved, and of a lively green colour, appearing towards the end of May,
Cones Monceau Ancient fine considerable the canton, a conflant rather hot. A native of North America, where it grows naturally on ground covered with water three or four feet deep, and is one of the few resinous trees which flourish in such situations. As it is hardy, and endures the cold of our climate, it would probably be planted to advantage in marshes on a large scale. Its wood is light, fine-grained, and very durable, whence it is much used in North America for various kinds of carpentry work, and is particularly excellent for hinges. It was introduced into this country by John Tradescent, senior, before the year 1640, but has not become common. La Mareck saw, at Monceau in France, on an estate formerly belonging to M. Duhamel, a beautiful villa of these trees in very moist ground, on each side of a small stream, some of which began to bear fruit in 1779. There is a variety in which the leaves are less spreading, rather remote, somewhat festerated, and scarcely in two rows, which is not to bande a tree.

Cupressus fruticosa quadrivalvis; Shaw. See Thuja articulata.

Cupressus, in Gardening, comprehends plants of the ever-green and deciduous ornamental tree kind; of which the species chiefly cultivated are the ever-green cypreses (C. sempervirens), the deciduous cypreses tree (C. dives), the white cedar or other ever-leaved cypreses (C. thyoides), the Portuguese cypreses (C. pineola); and the fir has been distinguished in the upright or horizontal or spreading kinds.

Method of Culture.—These plants, in all the different forts, may be raised either from seeds or by cuttings of the young shoots; but those procured from the seeds are by much the best plants in general.

In the first of these methods, the seed, being procured and obtained from the cones, by exposing them to a moderate degree of heat, should be sown towards the latter end of March, or beginning of the following month, on a warm bed or border, where the soil is rather light and mellow, and has been rendered fine by being well dug over, covering it in, to the depth of about half an inch. When the season proves dry, light waterings should be occasionally given; and, during the summer, the plants be kept free from weeds, and be watered a little when the weather is hot. In the winter time they should be protected from frosts, by mats, or other contrivances. They must be continued under this management till they have attained two years' growth, when they may be removed in the beginning of the spring, and planted in nursery rows, in a warm situation, at the distance of eighteen inches or two feet, and eight inches or a foot apart. When they have had three or four years' growth in these rows, they will be in proper condition for being finally set out where they are to remain. The belt time for performing this business is in the beginning of spring, when the secon is fine.

They are capable, however, of being raised in a more expeditious manner, by sowing the seeds in pots or tubs of light earth, and plunging them in a moderate hot-bed; as in this way they will be fit for removing into nursery rows, in the course of twelve months, or a little longer.

But as seed of this sort is slow in vegetating, this latter method is the most proper for it, as it may be more conveniently provided during the summer months, and protection in a sunny exposure in the winter; and when the plants do not appear in the course of the first year, the aid of a hot-bed may be conveniently had in the following spring, by which they will be brought forward with expedition to the state proper for being planted out in nursery-rows.

And in the second mode, the cuttings made from the young shoots should be planted in a warm sheltered situation, either in the early autumn or spring months; care being taken to have them daily supplied with water in the following summer. Afterwards the plants should be managed in the same manner as those raised from seed.

This method may be attempted with all the forts; but those of the ever-green kind are extremely slow in striking root.

The plants raised in this way are likewise much slower in their growth than those which are produced from seeds.

In their general culture, these plants should always be suffered to take their natural growth, without clipping or cutting them.

All these forts, from their beautiful growth and closely-placed foliage, have a very ornamental effect in the fronts of large plantations, as well as in groups, with other trees, on the sides of lawns, or other parts of pleasure-grounds. They have likewise a fine appearance in clumps, or planted out singly; and also in groups of from three or four to eight or ten of the different kinds, introduced where the extent of mown-graft ground is considerable.

And the ever-green forts, from their beautiful pyramidal growth, produce an agreeable variety, in afflacement with other sorts of plants, when planted near ornamental or other buildings of that description.

The large tree growing sorts may likewise be introduced with great effect, in the front parts of plantations of timber trees.

Cuprum. See Copper.

Cup-Toulza, in Geography, a small town of France, in the department of the Tarn, chief place of a canton, in the district of Lavaur, with 1002 inhabitants. The canton has 10 communes, and 4904 inhabitants, on a territorial extent of 1775.4 square kilometres.

Cupeni, or Cucnini, in Ancient Geography, a people of Gallia Aquitana, according to Toleomy.

Cur Avenacea, a diet-drink of oats, much recommended by some authors in various dieters.

Curacao, or Curazao, in Geography, an island in the Caribbean Sea, about 50 or 60 miles from the continent, 9 or 10 leagues in length, and about 4 in breadth, formerly belonging to the Dutch, who took it from the Spaniards in 1632, but captured by the English in January, 1857. The soil of this island is naturally barren, and the climate is far from being fabulous; but the Dutch, by their indefatigable industry, have converted the pastures, which formerly furnished a great number of cattle, into plantations for sugar and tobacco, and rendered it, in a variety of refineries, productive. It has good salt-works, which afford a considerable supply of this article to the English islands and the colonies on the continent. This island has been rendered peculiarly advantageous to the Dutch, by the contraband trade, which is carried on between the inhabitants and the Spaniards, and by its harbour's being the rendezvous to all nations in time of war. The Dutch ships from Europe have been accustomed to touch at this island for intelligence, or pilots, and then to proceed to the coast of the Spanish main for trade; in addition to which, there is a constant intercourse between Curacao and the Spanish continent. In the island are numerous warehouses, full of the commodities of Europe and the East Indies; containing all sorts of woolen and linen cloth, laces, silks, ribbands, iron utensils, naval and military stores, brandy, the spices of the Moluccas, and the calicoes of India, white and printed. One of the principal advantages derived by the Dutch from this island is owing to their trade in African slaves; three or four cargoes of whom have been annually brought.
brought hither, for the supply of Carthage, Porto Bello, and other towns on the continent of America. Thefe they fell at a high price, and with them they vend all the kinds of goods above enumerated. The Spaniards pay in gold or silver, coined or in bars, cocoa, vanilla, Jefuits' bark, cochineal, and other valuable commodities. The trade of this ifland, in times of peace, is said to be annually worth to the Dutch no lefs than half a million flerlings; but in time of war, it is much greater; for it then becomes the common emporium of the West Indies. The French refert hither to buy beef, pork, corn, flour, and lumber, which are brought from the continent of North America, or exported from Ireland: to that, in peace or war, the trade of this ifland has been rendered very flourishing and lucrative to the Dutch. On the south fide of the eafth end of the ifland is a harbour, called Santa Barbara; but the chief harbour is at the distance of about 3 leagues, where the Dutch have a very good town, and a strong fort. The town is one of the largest and neatest in the West Indies; the public buildings are numerous and handsome; the private houses commodious; and the magazines large, convenient, and well flored.

N. lat. between 12° and 13°. W. long. between 60° and 70°.

Curacao, in Ichthyology, a species of Chatoon; which fee. Curaponna, in Ancient Geography, a town of India, on this fide of the Ganges. Ptolemy. Curaray, in Geography, a river of South America, which runs into the river of the Amazons. Curassaw, Cxving, in Ornithology, the Penelope xerrofena of Gmelin; which fee.

Curasso, or Curassow. See Cazic. Curatas. See Caic. Curate, or Curia. See Cleric. Curate is properly a parfon, or vicar of a parifh, who hath the charge or cure of the parifhioners' fouls.

Curate is now more generally used for a deputie, or substitute of the parfon; or one who officiates in the place of the incumbent, or beneficeri. And in feafe of plurality of livings, or where a clergyman is old and infirm, it is refequisite there fhould be a curate to perform the cure of the church. He is to be licenfed and admitted by the bishop of the diocefe, or by an ordinary, having epifcopal jurifdiction: and when a curate hath the approbation of the bishop, he usually appoints the flary too; and in fuch cafe, if he be not paid, the curate hath a proper remedy in the ecclefliaical court, by a fequestration of the profits of the benefice; but if he hath no licence from the bishop, or hath no fuch flary appointed, or hath made a special agreement with the rctor, he is put to his remedy at common law, where he muft prove fuch special agreement, or leave it to a jury to give damages upon a quantum meruit. (Rights of Clergy, 177.) By flat. 28 Hen. VIII. c. 11, those who serve a church, during its vacancy, shall be paid fuch flary as the ordinary thinks reaflonable, out of the profits of the vacancy; or, if that be not fufficient, by the benefice, within fourteen days after he takes affiflion. By flat. 12 Anne, f. 2. c. 12, where curates are licenfed by the bishop, they are to be appointed by him a flary not exceeding 20l. nor lefs than 20l. per annum, according to the value of the livings; to be paid by the rctor or vicar; and the fame may be done, on any complaint made; and on failure of payment, they may fequestrate the profits of the benefice. But by flat. 36 Geo. III. c. 83, the bishop or ordinary may appoint a flary to curates of 50l. per annum, on livings where the rctor or vicar does not personally reside four months in the year at all, together with the use of the rectory or vicarage-houfe, and the garden and fable belonging to it, or 15l. per annum in lieu of it: the grant of the house, however, may be revoked; and the curate is required peaceably to surrender the pofteflion of it, under a penalty of forfeiting to the rctor or vicar all fuch parts of his flary as fhall then be unpaid, or thereafter become due; and also the fum of 50l. to fuch rctor or vicar, recoverable in an action of debt. By the fame statute it is enacted, that churches augmented by queen Anne's bounty fhall be declared benefices prefentative; and the officiating curate fhall have the fame flary, under fimilar regulations, as in the former cafe. It is further enacted, that the bishop or ordinary may apportion the flary to officiating curates of perpetual curates that are not augmented: and the ordinary may licenciate curates employed, though no nomination fhall have been made to him by the incumbent, and may remove any licenciate, subject to appeal to an archbishop of the province.

By a bill now (May, 1788) before parliament, it is profeeded to be enacted, that where spiritual perfonal fhall be non-resident, the bishop fhall assign to the curate a flary, which, with any former flary payable in refpect of fuch curate, fhall not exceed on-fifth of the annual value of the benefice, &c. If the annual value fhall exceed 400l. clear of all expenses, the payment of fuch curate excepted; and, in cafe of neglect on the part of the spiritual perfon to nominate a fit curate, the bishop may appoint one, assign him his flary, together with a refidence in the parifh or vicarage houfe, or in lieu of it a sum not exceeding 50l. a year. But the flary to be assigned to any curate fhall in no cafe exceed 250l. per annum, unlefs with the confent of the incumbent. The bishop in certain cafes may nominate more than one curate and allow them flaries. The incumbent is required to deliver a statement of the annual value of his benefice, on which the bishop fhall adjudge the flary with regard to benefices, &c. under 400l. a year, the regulations of the statute 36 Geo. III. continue in force.

One perfon cannot be curate in two churches, unlefs fuch may fatisfy the law, by reading both morning and evening prayers at each place: nor can he ferve one curate on one Sunday, and another curate on the next; for he muft not neglect to read morning and evening prayers in his church every Lord's day; if he doth, he is liable to punishment. (Comp. Incumb. 572.) But it is otherwise where a church or chapel is a member of the parifh church; and where one church is not able to maintain a curate. (Gon. 48.) A curate, having no fixed estate in his benefice, not being infufpended and indicted, may be remov'd at pleafure by the bishop or incumbent. (N. Y.) But there are perpetual curates as well as temporary, who are appointed where tythes are impropriate, and no vicarage endowed. These are not remov'able, and the impropriators are obliged to find them, fome whereof have certain portions of the tythes settled on them. Stat. 27 Car. III. c. 8.

It was provided in 1623 by can. 53, that if a bishop or-}

Gen. Ch. Col. Perianth expanding, hairy on the outside, deeply divided into four or five rounded segments; in the former case, two larger than the others; in the latter, only one. Cor. Petals four or five, roundish, concave, attached to the receptacle by a short claw. Stam. Filaments about sixty, in several rows, a little shorter than the petals; anthers egg-shaped. Fig. Germ. two, superior, hairy, connate at the base; styles simple, stigma capitate. Peric. Capsules two, united at the base, somewhat flexuous, roundish, hairy, one-celled, two-valved, opening on the interior side. Seed in pairs, oblong, shining, brown. La Marek, from a dried specimen in flower.

Eff. Ch. Calyx deeply divided into four or five segments. Petals four or five. Styles two. Capsules two, united at the base, one-celled. Seeds two in each capsule.

Sp. C. americana. Aeth. Guian. t. 579. tab. 252. Linn. Ill. Pl. 479. Leef. t. 250. A tree with the habit of coccoba. Trunk seven or eight feet high, from eight to ten inches in diameter, crooked; with a thick, wrinkled, cracked bark, which falls off in pieces of various sizes; wood reddish, compact; branches crooked, rugged. Leaves alternate, large, almost fiddle, oval or oval-oblong, edged with large fiddle creastures, green, very soft, furnished underneath with lateral prominent nerves and intermediate reticulated veins. Flowers in compound racemes, situated below the leaves, on the naked parts of the branches, and from the axils of the leaves which have already fallen; white, numerous, with two narrow acute bracts at the foot of each peduncle, and at each renunciation of the raceme. A native of South America, in Guiana, &c.

CURATIVE INDICATION, among Physicians, that which directs what is to be done for the cure of a disease. See SYMPTOM, and INDICATION.

CURATOR, among the Romans, an officer under the emperors, who regulated the price of all kinds of merchandise and vendible commodities in the cities of the empire. They had likewise the superintendence of the customs and tributes; whence also they were called logistae.

CURATOR, in Civil Law, a trustee, or person nominated to take care of the affairs and interests of a person emancipated, or interdicted.

In countries where the Roman law prevails, between the age of fourteen and twenty-four years, minors have curators assigned them; till fourteen, they have tutors.

CURATOR OF AN UNIVERSITY, in the United Provinces, is an elective office, to which belongs the direction of the affairs of the university; as, the administration of the revenues, the inspection of the professors, &c.

The curators are chosen by the states of each province: the university of Leyden has three; the burgomasters of the city have a fourth.

CURB, in the Manager, the designation given by horsemen to the bit, or mouth piece, that is provided with a branch and chain. See an. Bitts. Kirke was the ancient word, and kiph should, we apprehend, be the proper mode of spilling it now where any restraint is figurated: on the contrary, where any curvature or inflexion is intended, the present is the proper mode of spilling it, as in the following article, for they appear to us of different origins and meanings, and from different languages, and ought not to be confounded as they are at present.

CURB, a disease of the lower part of the hock of the horse, derived from curvé, French, and curvir, Latin, disfornt or bent from their proper figure. The back part of the hock of the horse, seen in profile, is nearly straight or a little bending inwards, that is, from the point of the os calcis to the head of the metacarpus, or Shank where the disease appears. If the hock is exerted beyond its strength, this part is apt to swell and form a curved line outwards, or rather backwards, more or less elevated according to the injury sustained. The advantage purchase of the asteomii muscles upon the os calcis seems to be the principal cause of this mischief, the parts being unable in violent and sudden action to sustain their effect, the tendons of the part are singularly wrapped round and strengthened, obviously to enable them to sustain these shocks, by the flattened or sheathlike expansion of the peroneus tendon.

In leaping, violent running, in hunting, drawing, and especially in the military charges of the cavalry, where they are suddenly stopped at full gallop, and often with injudicious and unnecessary pelluciditys, and without previous preparation, the horses are thrown on their haunches, and thus contently get defeated in this part, and often totally ruined. Nothing but imperious necessity, or the actual combat, one should suppose, could justify the frequent repetition of such a dangerous manoeuvre; much depends, however, upon the hand of the rider, in not making it injurious, as a very light preparation or warning given to the horse is sufficient. These curbs often grow hard, lose all the active inflammation which attends their full production, and seem hardly to affect the horse's going; at other times they are attended with considerable tenderness and lameness, and it must frequently happen, that the other parts of the hock suffer at the same time, and spasm very frequently, and sometimes thorough pain, accompany it.

After the asteomii muscles have attacked their tenon strongly to the os calcis, they appear to send portions for a second attachment to the head of the Shank, and there it is the injury is sustained.

In recent cases the cold bathing of the parts is the best remedy, and reit till the inflammation is subdued, with a dose or two of physic if there is occasion; in more confirmed cases blistering, or in more delicate cases firing, is the best remedy: a straight line in this case is drawn by the iron down the back of the calcis and head of the Shank, feathered on each side by diagonal lines at proper distances, and as the inside of the hock is apt to partake of the mischief, it may be well to draw a straight line down its middle, forming an angle to the former opening upwards, and closing pretty much as the figure of the hock itself does, the diagonal lines from this meet the diagonal lines from the former line, forming with them a double feathered figure; the same also may be done to the outside, if the case shall appear to demand it.

CURCAS, in Botany, a name given in Egypt to an eufentulous root, approaching to the tall and virtues of the colocasia.

It is also a name used in Malabar for a small fruit of the shape and size of a hazel nut. Both these things have the credit of being great provitics; and it is very probable, that the curcas of the East Indies may be the fruit called ldl by Avicenna, and said to posses the fame famous virtues. Garcitas has been led into a very great error by this similarity of names and virtues, and supposes the curcas of Egypt the same with the curcas of the East Indies.

CURCO, in Geography, a town of Asiatic Turkey, in the province of Caramania; 35 miles S.W. of Tarus.

CURCUJIGO, in Botany, (from Curculio, one of the coleopterean infests.) Gart. 72. Mart. Clas and order, hexandra monogynia.

Gen. Ch. Cal. none. Cor. petals six, oblong, spreading,
CUR
ing, withering. *Stem. Filaments six, very short; anthers linear, erect. *Py. Germ sessile, lanceolate; hyile very short; stigma large, tapering, with a three-cleft tip. *Peric. Capsule, when immature, three-celled, with the rudiments of six or eight seeds in each cell; finally appearing one-celled. Seeds one to four, fusing, black, with a hor- 


Sp. C. orichnitis. *Mart. Germ. tab. 16. fig. 11. Plant. Coromand. 14. tab. 1. *Root tuberous, with many fleshy verruncular fibres. Leaves numerous, all radical, petiololed, sword-shaped, nerved, fender, bifid with a few soft white hairs when young, from six to eighteen inches long, half or three quarters of an inch broad; petiole channelled, sheath-shaped below, and embracing the inner ones. *Racea solitary, axillary, two-ranked, its top until appearing above the earth; scape about an inch long, compressed, clubbed; lower bracts remote, upper ones nearer, spade-like, point- 
ed, decreasing in length towards the top, so that they become nearly horizontal like a corvus, one-flored. *Flower pretty large, yellow, only one or two of the lowest fertile, the others abortive from the want of a pistil; peduncles so long that they elevate the flower above the earth more than an inch, hairy, three-fided. A native of shad uncultivated places about Samucotah on the coast of Coro-
mancel, but not common. It is the Nallatady of the Tel-

LINGAS.

CURCULIO, in Entomology, a genus of the coleoptera order. The antennæ are clavated or terminated in a club, and p€ated on the fnout, which is borough and prominent; feelers four, and filament.
The curculions, in a flat of larva, infest chiefly on the feeds of various kinds of plants; many of them infest granaries, and commit vast depredations, devouring the ripened cotyledons, and leaving only the hull. The larvæ have flky legs, and the head also protected with a fally covering. The perfect insects are, in general, of a elegant form; and some of the species infinitely more remarkable for the splen-
dour and beauty of their colours, than almost any other of the insect race. The species are very numerous, and are divided into a number of distinct families, or sections. Fabricius divides them into three genera, as curculio, anthro-
bos, and brachycerous. Some other continental naturalists divide them into a still greater number of genera.

Species.

Section III. * Snout longer than the thorax; Thighs un-

GIGAS. *Thorax and wing-cases scabrous; antennæ white at the tip. Olivier.

Native of Japan. Described from a specimen in the British Museum. PALEARUM. *Deep black; thorax flat above; wing-
cases short, and frilled. Lin. Donov. Inf. Ind.

Lives on the palm-trees in India.

CRUENTATUS. *Black; lines on the thorax, and two dots on the wing-cases ferruginous. Olivier.

Inhabits Carolina. Bankian Cabinet. LONGIPES. *Blackish; wing-cases ferruginous; snout emarginate; anteior legs long. Vnet.

Inhabits the Cape of Good Hope.

COLOSSEUS. *Blackish; wing-cases brown or cinereous; legs elongated. Olivier.

An East Indian species, the curculio longipes of Drury. INDUS. *Black; thorax subovate, excavate, punctured; wing-cases with ruged grooves; flanks spiny. Linnae.

A species of large size, found in India.

PAGANUS. *Greyish; thorax brown on the back, with cinereous curves; snout with two grooves. Fabr.

The snout of this insect is thick, and twice as long as the head; the antennae grey, with the base black.

A native of India.

FERRUGINEUS. *Dull-purplish; wing-cases abbreviated; thigs ciliated in the middle. Olivier.

Inhabit Brazil. Sulzer.

HEMIPETUS. *Dull-purplish; wing-cases abbreviated and spotted. Linna. Curculio rufus fasciatus, Degeer.

Native of South America, chiefly Cayenne. VARIEGATUS. *Rufous and black varied; snout at the tip black. Olivier.

From the Cape of Good Hope.

LIMBATUS. *Blackish; thorax, and wing-cases at the margin rufous.

Described by Olivier as a native of Senegal.

CRUCIATUS. *Black; thorax sub-spinous; lines on the posterior end of the wing-cases cruciform. Fabr.

A New Holland species, in the Bankian Cabinet. SANGINOLENTUS. *Deep black; wing-cases marked with a fanguineous band at the base. Olivier.

Inhabits the American island Tobago.

FASCIATUS. *Deep black; wing-cases frillated, with a fanguineous band in the middle. Fabr.

STRIATUS. *Black; wing-cases marked with silky stripes.

Curculio striatus, Olivier.

Described from a specimen in the Bankian cabinet. Found in the island of Terre Neuve.

RUBER. *Deep black; antennæ griseous; thighs sulcate. Fabr. Curculio gastes, Olivier.

Native of Cayenne.

GAGETUS. *Deep black, and glabrous; snout somewhat pressed. Fabr.

Inhabits Cayenne.

MENDICUS. *Ovate, greyish; wing-cases frillated. Olivier.

Described from a specimen in the cabinet of the late king of France. It is a native of the island of Madagascar.

PINETI. *Black; wing-cases frillated, and spotted with white. Curculio confusus, Paykull.

Found on the pine in Sweden.

PINI. *Wing-cases reddish, with clouded bands. Linna. Curculio caflancus, Degeer.

Also inhabits the pine in Sweden.

ONOPORDI. *Black, with cinereous hairs; snout deep black, with an abbreviated groove on each side at the base.

Native of Africa.

URSUS. *Ferruginous-brown, lineated with white; snout black, with an abbreviated groove each side at the base. Curculio vitattata, Mant. Inf.

Found in Italy. The snout is cylindrical; wing-cases smooth.

PLANUS. *Black, and without spots; snout cylindrical; wing-cases frillated. Fabr.

Native of Germany.

PUNCTATULUS. *Yellow, variegated with brown; abdomen cinereous, dotted with black. Fabr.

Inhabits America. The antennæ are black; legs cinere-

OCELARIS. *Greemish-black; snout ferruginous; orbits of the eyes blood. Fabr.

A native of Barbary, in the museum of M. Desfontaines.

3 CYNARAE.
CURCULIO.

CURCULIO. Black, sprinkled with greenish; snout black, and somewhat carinate. Curculio cardui, Rossi.

According to Dr. Vall, a native of Africa.

COLON. Greyish; wing-cases marked with a white dot. Paykull. Curculio palaeopterus, Scop.

Inhabits Germany.

Aethiops. Deep black; antennae and cheeks pitchy; wing-cases oblance and frigated. Paykull.

Found in Sweden.

Aethiops. Deep black; antennae frigated, and sprinkled with ferrugineous. Fabr.

Observed on the scirpus, in France, by Boe.

PRUNI. Deep black; antennae ferrugineous; thorax bituberculate. Linn.

Native of Europe.

ARMENIACE. Deep black, and immaculate; wing-cases with crested stria. Fabr.

Found in gardens in Germany.

4-TUBERCULATUS. Thorax with four black tubercles; wing-cases frigated and varied with cinereous. Curculio quadricornis, Paykull.

Mus. Daidorf; specimen found near Kiel.

FRIEDRICH. Depressed, villous, and frigated; snout black deep. Fabr.

Native of Germany.

CAMPAUS. Ovate, and black; wing-cases frigated and obtuse. Paykull.

An example of this species found in England is preferred in the Bankian cabinet.

VARIABILIS. Subtefaceous; thorax green lined; snout at the tip frigated. Fabr.

Inhabits Hamburgh. Dr. Schulz.

PICRIOSTRIS. Oblong, black, fivery-filky; snout half-way, and legs piceous. Paykull.


Found in England.

FLORALIS. Dull grifeous; future of the wing-cases pale. Paykull.

Taken on flowers in Sweden.

PSEUDACORI. Above black; thorax at the sides ferrugineous; wing-cases frigated; future at the base white. Fabr.

Inhabits France.

CASTOR. Ovate; thorax tuberculate; body frigated; future at the base whitish; legs rufous. Fabr.

Native of Germany.

PERICARPIUS. Subglobose, and clouded; wing-cases on the future at the base, white. Linn.

Found on the ceratophylaria in Europe. Herold.

QUERCICOLA. Deep black; thorax tuberculate; wing-cases frigated; future at the base white; legs black. Paykull, Monogr.

Inhabits the oak in Sweden.

ASSIMILIS. Thorax bituberculate, and canaliculate; wing-cases frigated. Paykull, Monogr.

Inhabits Sweden.

SILVIUS. White and fufcous varied; wing-cases with an elevated black dot at the base; snout black. Fabr.

A rare species found near Kiel.

CABRE. Wing-cases with two abbreviated white bands. Fabr.


BIFENCatum. Villous, cinereous; wing-cases with a black spot in the middle; thanks yellowish. Linn.

Native of Sweden.

CARPINO. Villous, greenish; snout black; legs teftaceous. Knock.

Inhabits Germany.

ERYSIMI.
CURCULIO.

ERYSIMI. Black; thorax histriceulate and greenish; wing-cases cyanose. Paykull.

4-MACULATUS. Blackish, wing-cases marked with four whitish spots. Linn.

Inhabits various places in Europe.

UNIFACIATUS. Above fuscous; wing-cases banded in the middle with cinereous. Fabr.

Found in Saxony by Hybner.

BIFACIATUS. Black; wing-cases with two cinereous bands, that at the base larger and waved. Fabr.

This species inhabits Germany; the thorax is rounded, and black, with a paler dorsal line; scutellum cinereous.

ACRIOULUS. Black; antennae and legs pitchy; abdomen ovate. Linn.

Frequent on tetradynamous flowers. Herbit.

SABRATRUS. Fuscous; thorax tuberculated; wing-cases scabrous; legs pitchy. Fabr.

Native of Germany. Smldt.

ALAUDA. Above deep black; thorax histriceulate, and elevated at the anterior edge. Fabr. CURCULIO ELEVATUS, Gmel.

Inhabits same country as the last.

DORSALIS. Wing-cases red; future half-way black. Linn.

Found on the common pilewort, in Europe.

QUERCUS. Cineraceous; back of the thorax fuscous; wing-cases telfaceous. Linn.

A small species found on the oak in Germany and Sweden.

SUTURALIS. Ovate and fuscous, with a longitudinal white line. Fabr.

Feeds on the willow. This kind is found in Germany.

CRUX. Deep black; thorax with two dots at the base; wing-cases at the future, and sprik ed dots white. Schulz.

LEMNE. Deep black; snout flat at the tip; wing-cases frillated. Fabr.

Found on the icema (Duck weed) in Germany. The species is small.

EXCLAMATIONIS. Deep black; wing-cases with a white dot in the middle, and small white line at the bat. Oliv.

Inhabits New Holland; Bankian cabinet.

VENUSTUS. Fuscous; thorax and elytra lined with white; legs telfaceous. Fabr. CURCULIO ALLO VITTATUS, Herbit.

Found in England.

PLANTAGINIS. Wing-cases cinereous, with a fuscous spot in the middle. Paykull.

Inhabits Saxony.

RUMICIS. Grisious, clouded with black; antennae fuscous. Linn.

Found in the north of Europe.

DISPERSUS. Grisious; thorax black lined with cinereous; wing-cases tessellated with black dots. Fabr.

GRANARIUS. Pitchy; thorax punctured, and as long as the shells. Linn.

This is the weevil infect so destructive to granaries where corn has been kept for some time. It is destroyed by heating elder or henbane among the corn.

OKYRA. Pitchy; thorax dotted, and length of the wing-cases the latter with two rusious dots. Linn.

Found in rice imported from the East Indies.

2-TUBERculatus. Ferrugineous; thorax length of the wing-cases, with two elevated dorsal dots. Fabr.

Native of New Zealand. In the Bankian cabinet.

PARAPLECTICUS. Cylindrical, and subcinereous; wing-cases mucronate. Linn. Geoffr.

Found in England but rare.

ASCINUS. Cylindrical, hoary, lined with fuscous. Linn.

Inhabits Germany.

STRIATELLUS. Oblong, dull; wing-cases cinereous, and slightly irioted with fuscous. Fabr.

Taken on plants in Barbary.

UMBELLATARUM. Thorax black, with cinereous lines; wing-cases mucronate and greyish. Fabr.

Found on umbelliferous plants in Barbary.

MUCRONATUS. Cylindrical, cinereous, lined with fuscous; wing-cases pointed. Fabr.

Inhabits same country as the preceding.

FERRUGATUS. Black, with ferrugineous hair; wing-cases obtuse. Fabr.

Native of Hungary. Hybner.

GAYS. Deep black, and glossy; wing-cases irioted and dusky; snout truncated. Fabr.

Found in Giana. Dr. Pert.

8-LINEATUS. Cylindrical, black; thorax and four lines on the wing-cases white. Oliv.

Described from a specimen in the royal Paris collection. The species inhabits the Cape of Good Hope.

SEMIFUNICULUS. Cylindrical; thorax with white lines; wing-cases with white dots. CURCULIO SEMIFUNICULUS, Fabr. Erculis semifuniculatus, Fabr. Mant.

Native of N.W. Holland. Bankian cabinet.

4-POSTULATUS. Black; wing-cases with two ferruginous spots. Oliv.

Inhabits the Cape of Good Hope.

MIXTUS. Cylindrical; clouded white and brown; wing-cases fuscous, which at the anterior are banded with yellow; club of the antennae telfaceous. Fabr.

Found in Barbary. Desfontaines.

FILIFORMIS. Cylindrical, subcinereous; three brown lines on the thorax. Fabr.

Native of Italy.

CYLINDRICUS. Cylindrical, above black; wing-cases cylindrical, with a pale band. Oliv.

Inhabits Siberia.

NOTATUS. Thorax fuscous, with four white dots; wing-cases fuscous, with two telfaceous bands, the anterior one abbreviated. Fabr.

Inhabits Barbary, according to Valli.


Inhabits India.

ANGUSTATUS. Cylindrical, deep black; wing-cases obtuse and punctured. Herbit. CURCULIO PULVERIANTUS, Redil.

Inhabits England. The thorax is rough; wing-cases frillated with dots.

BARDANA. Cylindrical, with grey down; anterior legs elongated. Fabr.

Found in Saxony. The wing-cases are rounded, and obtuse.

ASCANII. Cylindrical, deep black, beneath bluish. Fabr.

Inhabits the South of Europe.

LINEOLA. Cylindrical, black; wing-cases marked with a telfaceous stripe. Oliv.

Native of New Holland, Bankian cabinet.

LINEARIS. Elongated, black; antennae and legs pitchy; snout attenuated at the base. Paykull.

Inhabits Europe. Found near Strasburg by Hermann.

CRASSIPES. Anterior thighs subclavated; body deep black. Fabr.
CURCULIO.

Some part of Europe as the foregoing,


Found on flowers in Europe.

LYMEXYLON. Elongated; griseous; thorax scabrous; wing-cafes frayed. Fabr.

On the rotten trunks of oak trees. Dr. Helvig.

Section 1. Anterior Thighs dentated.

CALCARATUS. Black; wing-cafes sprinkled with fuscous; anterior shanks acutely dentated. Fabr.

The largest in this order of curculiones; the native place is unknown.

BIDENS. Posterior thighs dentated and black; wing-cafes armed with a single spine each. Oliv.

Native of New Zealand.

TAURUS. Griseous; thorax and wing-cafes tuberculated; two bent horns on the frons. Oliv.

Inhabits Cayenne.

CORNUTUS. Thorax tuberculated; frons armed on each side with an acute spine. Oliv.

Native of Cayenne. This is a large insect.

MILIARIUS. Fuscous; thorax and wing-cafes rough with numerous tuberculations of deep black. Oliv.

Inhabits same country as the last.

CYNICOLLIS. Olongo, blackish; thorax blue; sides scabrous; wing-cafes frayed. Oliv.

A large species in the collection of Dr. Hunter. Its native place unknown.

JAMAICENSIS. Doll, rough; fasciculate tubercles each side the thorax; wing-cafes frayed. Oliv.

Native of South America.

SENEGALENSIS. Wing-cafes tuberculated, and pointed, with two feet of golden down. Fabr.

Inhabits Senegal Paykull.

VALIDUS. Anterior thighs dentated, oblong, rough and black; anterior shanks dentated. Oliv.

Native of Cayenne.

CORONATUS. Black; anterior part of the thorax ciliated with spines; wing-cafes frayed. Oliv.

MUCKOREUS. Four anterior thighs dentated; wing-cafes frayed with yellowish powder, above the tip gibbous. Linn. Engl.

Native of the East Indies.

PSIS. Four posterior thighs dentated; wing-cafes frayed; black, with broad repandate grey line. Linn.

An East Indian species.

SPINIPES. Black, two lines on the thorax, and four on the wing-cafes white; anterior shanks spinous. Fabr.

From the Hunterian cabinet; a native of South America.

BOMBINA. Ferruginous fuscous; wing-cafes frayed, and bifeft with white raifed tubercles. Fabr.

Native of Cayenne.

SCORPIO. Deep black; thorax flat, at the base cincereous; wing-cafes tuberculated, and pointed, middle cinereous. Fabr.

Same country as the former.

CHIMARIS. Posterior thighs dentated; black spotted with white; anterior legs very long. Fabr.

Native of South America.

GUTTATUS. Thighs subdentated; black; thorax with two spots at the base; wing-cafes tuberculated and dotted with whitish. Oliv.

Native of Cayenne.

FASCICULARIS. Thighs black; wing-cafes tufted with down; legs varied with cinereous. Oliv.

Native of Cayenne.

HYSTRIX. Thighs black; wing-cafes with crested frize, and two white dots.

MARMORATUS. Brown spotted with white. Oliv.

Native of Cayenne.

SCABER. Thorax carinated; wing-cafes growing, the elevated ridges armed with tuberculated spines. Fabr.

Inhabits Cayenne.

CYLINDRIKOSTRIS. Thorax scabrous; wing-cafes bifurcated behind. Oliv.

This is a large species found in New Holland. Bank's cabinet.

STIGMA. Wing-cafes with a large ferrugineous spot.

Inhabits India.

HERBS. Thorax scabrous; wing-cafes falcated, tuberculate; mouth bearded. Oliv.

Native of Bengal.

ANNUATUS. Thorax dentated, pale; thorax and wing-cafes fimbriated with black. Curculio annulatus, Linn.

Native of India.

CALIGINOSUS. Wing-cafes frayed with approximate dots. Fabr.

Inhabits England. The thorax is rounded and carinated; thighs acutely dentated.

DUBUS. Thighs dentated and black; thorax smooth; wing-cafes frayed scabrous. Fabr.

Native place unknown.

ROKEUS. Sprinkled with fuscous; anterior legs elongated. Fabr. Curculio adffperus, Mant.

Native of Cayenne.

BRUNNEUS. Brown; frons fuscous; wing-cafes telfaceous, frayed with dots. Oliv.

Bank's cabinet. Inhabits the Cape of Good Hope.

ABETIS. Black; wing-cafes marked with linear interrupted white lines. Linn.

Found on the pine trees in Europe; rare in Britain.

DENTIPES. Thorax white; wing-cafes black with white lines; thanks dentated. Oliv.

Native of Senegal.

MULTIGUTATUS. Black; thorax and wing-cafes dotted with white. Oliv.

POPLILOUS. Thighs dentated tuberculate, and fuscous; wing-cafes with a large grey marginal spot, dotted with black. Oliv.

Native of Cayenne.

RETIPLICATUS. Olongo, pitchy; wing-cafes reticulate, oblique bands pale; anterior shanks spinous. Fabr.

Found at Tranquebar by Dr. Kunig.

LAPATHI. Thighs bidentated, white and black varied; thorax and wing-cafes mufcated. Linn.

Inhabits the willow in Europe.

IRRORATUS. Thighs dentated white; above fuscous spotted with white; thighs anulatus with white. Fabr.

Native of Cayenne.

TRICINCTUS. Deep black; side of the thorax, with three bands on the wing-cafes white; anterior legs elongated. Fabr.

Inhabits Guadaloupe island.

STATUA. Deep black; wing-cafes falcated, with a common white spot; posterior thighs elongated. Fabr.

Native place unknown.

C. GUTTATUS. Black wing-cafes with three white dots. Fabr.

An American species in the collection of Dr. Hunter.

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LUPIDUS.
CURCULIO.

LURIDUS. Thighs dentated ovate, dull black; wing-cases frizzled with dots. Oliv.

Native of New Holland.

STOLEDES. Thighs fuscos; posterior shanks incurved and toothed. Fabr.

Bankian cabinet. Native of the Cape of Good Hope.

FRIGIDUS. Fuscos, wing-cases frizzled, slightly tuberculated, and varied with ferruginous. Fabr. Curculio abbreviatus. Oliv.

Native of China and Amboyna.

GIBBUS. Black; wing-cases with excavated dots, and an abbreviated whitish streak. Oliv.

Inhabits the island of Bourbon.

OCELLATUS. Dull, and cinereous; wing-cases marked with an ocular black spot. Oliv.

Native of Cayenne.

MEDITARNUS. Thighs dentated; wing-cases frizzled, and acuminate behind. Oliv.

Native of New Holland. Bankian cabinet.

STUBILUS. Thighs black; sides of the thorax rounded; wing-cases subfuscous. Oliv.

Inhabits New Holland.

MANGIFERA. Dull; thorax scabrous, with a dorsal white line; wing-cases reticulated. Oliv.

Lives, according to Dr. Koenig, in the nut of the mango.

STULUS. Greyish; wing-cases with a common lunate cinereous spot; snout deep black. Fabr.

Native of Curomandel. Vahl.

ARANEUS. Obscure varied with cinereous; thorax rounded at the sides. Fabr.

Native of South America.

STRIX. Black; thorax linedate with ferruginous; wing-cases frizzled with ferruginous dots. Oliv.

Inhabits Cayenne. The head is ferruginous; wing-cases short; thighs acutely dentated.

SQUALIDUS. Villous-grey, with testaceous snout. Oliv.

Native of Surinam. Bankian Cabinet.

GERMANUS. Black; thorax with two testaceous dots. Paykull.

Found in Germany, but not commonly.

SEROPHULARIS. Thorax whitish; wing-cases with two black dots connected with white. Paykull, &c.

Native of Europe.

VERRASCULUS. Black; sides of the thorax yellowish; wing-cases dotted with black and white in alternate four lines. Fabr.

Inhabits near Kiel.

BLATTA scenery. Whitish; wing-cases varied with black; dorso spot at the base and tip black. Fabr.

Native of Italy.

SOLANUS. Dull; wing-cases with raised lines, black, dotted with cinereous. Fabr.

Inhabits Saxony. The head is black; legs greyish.

GRAVIS. Black; wing-cases varied with ferruginous; thighs grooved. Oliv.

Native of the Cape of Good Hope.

S-POINATUS. Wing-cases at the future, and two dots white. Linn.

Found on plants in Europe.

GUTTULA. Thorax tuberculated and black; wing-cases frizzled, with a white dot behind. Fabr.

Found in Saxony.

ABBREVIATUS. Fuscos, sprinkled with greyish dots; wing-cases abbreviated. Fabr.

Same country as the preceding.

ECHII. Black; thorax and wing-cases linated with white. Curculio geographicus. Oliv.

Found in Germany.

DIEDYUS. Above fuscos; wing-cases frizzled, with a transverse white spot at the sides. Paykull.

Inhabits Germany, on the nettle.

LAMII. Black; thorax tuberculated; wing-cases varied with cinereous; snout arched and black. Fabr.

Native of Germany.

BRASSICAE. Villous-grey; snout arched and deep black. Fabr.

A small European species. The thorax is smooth, dullish, and greyish, legs blackish.

BOCAGINUS. Villous-grey; feet rufous. Oliv.

Inhabits France.

HEMORHOIDALIS. Thorax fuscos; sides greyish; wing-cases at the future and tip ferruginous. Fabr.

Native of New Holland, in the Bankian Cabinet.

TRIMAULUS. Wing-cases black, with three cinereous spots; the posterior forming a common lunule. Paykull.

Inhabited in Alfcase by professor Hermann.

LITURA. Varied white and black; snout deep black to yellow. Paykull.

Lives on the thistle. A native of Europe.

VILENUS. Villous-grey; feutel, and oblique posterior band on the wing-cases white. Herbst.

Native of Germany.

RAPHANI. Blackish; thorax tuberculated; snout bent and deep black. Fabr.

VARIANS. Black; wing-cases rufous; margin black.

PARKULL. Curculio bezdrungii. Found on the pine in Sweden.

TEGLODYTUS. Fuscos; thorax with a dorsal cinereous line; wing-cases and legs testaceous. Paykull.

Inhabits Europe near Kiel.

CARBONARIUS. Oblong, deep black; antennae club-villous; wing-cases marked with cremated fuscus. Fabr.

Native of Europe.

ACERIMUS. Black; tip of the thorax bidentated; wing-cases glossy. Fabr.

CERASI. Deep black; thorax bidentated at the tip; wing-cases oblong. Linn.

Native of Europe.

VILOCUS. Black; wing-cases frizzled and violaceus. Linn.

Inhabits the north of Europe, on the pine.

PROBOCIDUS. Griseous; snout twice as long as the body. Fabr.

Native of North America.

NUNCII. Body greyish, and length of the snout. Fabr.

Inhabits Europe, and feeds on the nut.

GULOUS. Dusky-brown; legs testaceous. Fabr.

Found near Paris.

PARASITA. Ferruginous sprinkled with cinereous; thighs with a black spot. Fabr.

Native of Cayenne.

ESURIENS. Griseous; feutel, dorso line on the thorax, and common spot on the wing-cases behind whitish. Fabr.

Inhabits France.

NASUTUS. Brown; wing-cases frizzled, cinereous, with the tips brown. Oliv.

Described from a specimen in the British Museum. Its natural place unknown.

HAUSTELLATUS. Griseous; wing-cases frizzled; snout four times the length of the body. Oliv.

Native
Native of the Cape of Good Hope.

Viminarius. Grey and black varied; snout and legs rufous.

Fabr.

Habits Cayenne.

Curculio. Fuscous, fcelent and wing-cases with oblong cinereous bands. Paykull.

An European species.

Amoenum. Deep black; two dots on the thorax and five on the wing-cases white. Paykull.

Native of New Holland.

Metallinus. Brassy-black; thorax dotted; wing-cases flared with dots. Fabr.

Inhabits South American islands.

Brocourt. Griseous; head hidintended. Fabr.

Native of New Zealand.

Tenuisrostris. Black, with numerous white waxes; antennae rufous.

Native of Europe. The club of the antennae is grey, as is also the femur.

Druparum. Wing-cases teachaceous, oboletely faciated.

Linn.

Native of Europe.

Truxini. Ferruginosous brown; head and back black.

Paykull.

Found on the aph the Sweden.

Melanocéphalus. Brown; head fuscous; snout deep black.

Fabr.

Native of Saxony.

Depressus. Thorax defrumped; fides obtusely angulated. Linn.

Inhabit South America.


Found on the flowers of fruit-trees.

Vortex. Grey and fuscous spotted; faunt bent and deep black.

Fabr.

An Italian species.


Native of Europe.

Tremula. Blackish; wing-cases frated, and sprinkled with grey. Paykull.

Found on the poplar in Sweden.

Zestus. Fuscous, lineated with cinereous; legs pale.

Fabr.

Native of South America.

Taniatus. Thorax black; anterior and posterior margin rufous; wing-cases pale, spotted with black. Paykull.

Native of Europe. Snout black; mouth fanginemeous.

Elongatus. Thorax elongated; anterior shanks, bis- dented. Fabr.

Native of Jamaica.

Section *** Snout long; posterior Thighs formed for leaping.

Alni. Wing-cases tealaceous, with two dusky spots.

Paykull.

Habits England and other parts of Europe.

Pilosus. Black, varied with cinereous. Fabr.

Native of England, in the Bankian cabinet.

Horticory. Deep black; band and half band, with the legs, tealaceous. Fabr. Curculio mutitatus. Lachart.

Native of Germany.

Sali cott. Deep black; shanks tealaceous. Fabr.

Found on the willow in Sweden.

Salix. Wing-cases deep black, with two white bands.

Linn.

A native of Europe; found on the willow.
CURCULIO.

Smargululus. Greenish; wing-cases dotted, with strong erect spine before, and another behind. Fabr. Native of Cayenne.
Octotuberculatus. Varied fuscous and cinereous, dotted, and gibbous behind; tubercles eight. Fabr. Native of Cayenne.
Flavescens. Dull; thorax and wing-cases acuminated, the sides yellow. Fabr. Native of South America.
Lateralis. Covered with green scales; sides of the thorax and wing-cases yellow. Fabr. Native of India.
Veridis. Green; sides of the thorax and wing-cases yellow. Linn. Found on the plumb in Europe.
Splendulus. Shining-green; wing-cases in the disk cinereous, banded with black. Fabr. A Siberian species.
Mordilloides. Thorax and wing-cases fuscous and grey varied, with numerous elevated dots of deep black. Fabr. Inhabits France and Barbary.
Nebulosus. Hoary; wing-cases banded obliquely with black. Linn. Native of Europe.
Marmoratus. Black, and rough with white lines; wing-cases white, sprinkled with black squarish spots. Fabr. Inhabits Germany.
Sulciostris. Oblong, cinereous, and somewhat clouded; snout trifurcated. Linn. Found on plants in Europe.
Porculus. Blackish, varied with cinereous; head retorse, and with the snout carinated. Linn. Native of Hungary.
Perlatus. Black; abdomen white, with raised glabrous black dots; snout grooved. Fabr. Native of China.
Vesula. Griseous; wing-cases rugosely, black, with cinereous spots; snout deep black. Fabr. Inhabits Tranquebar.
Incansus. Oblong, and fuscous; thorax flat on the back. Linn. Found on plants in Europe.
Costatus. Cinereous; thorax black, with four cinereous lines. Fabr. Native of the south of France.
Longic anus. Fuscous, margin of the thorax, and two dots ferruginous; anterior legs long. Oliv. Native of Brazil.
Spinifex. Cinereous sprinkled with brown; thorax acutely spinied. Fabr.
Muralis. Fuscous, with the thorax trilineated; wing-cases with alternate pale and dusky lines, and dotted with black. Fabr. Native of Europe.
Polygonis. Thorax linedate; wing-cases cinereous, marked with three fuscous lines, and dotted with black. Curculio polygonis, Linn., &c. Inhabits Europe. The snout is grey, with a longitudinal white line.
Guttatus. Blackish; wing-cases grey, with two white dots; the posterior one large and common. Fabr. Native of Britain.
Gressorius. Griseous; head and thorax black, with a white dorsal line. Fabr. Native of Italy.
Gramineus. Black; wing-cases friliated; antennae and legs ferruginous. Fabr. Found on graminiferous plants in Germany.
Lineatus. Fuscous, with three paler streaks on the thorax. Linn. Found on plants in Europe.
Cinerascens. Cinereous; back fuscous. Fabr. Native of Italy.
Ruficollis. Tellaceous; head and wing-cases friliated, cinereous brown. Fabr.
Hirsutulus. Cinereous, and hispid; wing-cases frilated; antennae and legs yellowish. Fabr. Curculio echinatus, Bonfd.
Parvulus. Green; antennae and shanks tellaceous. Fabr. Native of Italy.
Viridicollis. Thorax green and scaly; wing-cases frilated and black. Fabr. Inhabits Germany, on the oak.
Striatus. Fuscous; wing-cases frilated, cinereous, with black dots. Fabr. Native of Barbary.
Lacerta. Griseous; wing-cases frilated; antennae black at the tip. Fabr. An East Indian species, in the Bankian Cabinet.
Ruficornis. Deep black, with rufous antennae; thorax on each side bituberculated. Linn. Found
CURCULIO.

Found on plants in Europe. The wing-cafes are fricated.

Cyanaculatus. Cylindrical, deep black, with the legs rufous; thorax canaliculated. Fabr.
A small species, and inhabits American islands.

Cladorus. Cylindrical, black; wing-cafes fricated; antennæ and legs rufous. Linn. Curculio pinnatus, Herbst.
Native of Europe; found on the oak.

Tristis. Black; wing-cafes grooved, cinereous. Fabr.
Native of Sweden and England.

Racaus. Black; wing-cafes fricated, fuscous, with cinereous spots. Paykull.
Inhabits Saxony.

Described from a New Holland species in the Bankian Cabinet.

Native of Sweden.

Maxillosus. Ovate, black; jaws exerted and bent. Fabr.
Native of Hungary. Hybner.

Rotundatus. Black; wing-cafes with dotted ftrix; antennæ and flanks rufous. Fabr.
Native of Germany.

Variatibus. Black; thorax carinated, and variolous; wing-cafes fricated. Fabr.
Found in Saxony.

Succinclus. Deep black; margin of the wing-cafes, and two small lines white. Fabr.
Native of the Cape of Good Hope.

Inhabits Jamaica.

Vittatus. Deep black; wing-cafes marked with abbreviated white and red lines. Linn.
An elegant species, found in Jamaica.

Spengleri. Wing-cafes yellow, with very glabrous abbreviated lines of black. Linn.
Native of American islands.

Bivittatus. Wing-cafes with ftrix of dots, and a marginal and an interrupted dorsal band of yellow. Fabr.
Inhabits the island of St. Thomas.


An insect of large fize, found in South America.

Festivus. Wing-cafes yellowish, with abbreviated black streaks, and a marginal one fanguineous. Fabr.
Native of South America.

Impressus. Black; thorax and wing-cafes with impressed dots of white. Fabr.
Inhabits Jamaica.

Rivulus. Black; thorax spotted with rufous; wing-cafes with three impressed cinereous lines. Fabr.
Native of the Eait Indies.

Verrucosus. Brassy-black, with raised dots; wing-cafes warted behind. Fabr.
Native of the Cape of Good Hope.

Capensis. Black; thorax with elevated dots; wing-cafes with impressed ftrix. Linn.
Inhabits same country as the former; the snout is fulated.

6-Vittatus. Black; thorax rough and lined with white; the wing-cafes pointed. Oliv.
Native place unknown.

Inequalis. Thorax unequal, prominent in front; wing-cafes grooved, and fulated behind; snout tri-fulated. Fabr.
An African species, in the Bankian cabinet.

Accuminatus. Cylindrical, fuscous; wing-cafes pointed at the tip. Fabr.
Native of New Zealand.

Emetitus. Black; thorax and wing-cafes spinous; front excavated. Linn.
Native of India.

Cultratus. Cinereous; thorax with two compressed tubercles; wing-cafes tuberculated, the posterior part cinereous. Fabr.
Inhabits New Holland.

Trienus. Cinereous; thorax scabrous, the anterior part impressed; wing-cafes spinous. Fabr.
Inhabits same country as the last.

4-Dens. Cinereous; thorax scabrous; wing-cafes spinous; four posterior spin's longeit. Fabr.
Native of New Holland.

Clavus. Whitish; thorax canaliculated; wing-cafes spinous; three small red lines at the base. Oliv.
Inhabits New Holland.

Rumifer. Cinereous; thorax scabrous; wing-cafes with fangunious spin's. Fabr.
Native of the Cape.

Inhabits the Cape of Good Hope. The snout is smooth and thick at the tip; legs black.

Pellulatius. Thorax armed each side with a nodulous spine; wing-cafes with tuberculated ftrix; tip acuminate.
Native of the Cape of Good Hope.

Glandifer. Dull; thorax scabrous; wing-cafes with three elevated spinous lines. Fabr.
Inhabits the Cape of Good Hope.

Section ***** Snout short; Thighs dentated.

This is the elegant insect known by the name of the diamond beetle of New Holland, to which part of the world this species is peculiar.

Pinguis. Anterior thighs toothed; gibbous, and blackish; throat with yellowish lines; wing-cafes with two yellowish streaks, and a small line at the tip. Fabr.
Native of Cayenne.

Trienus. Cinereous; wing-cafes emarginate at the tip, with three teeth. Fabr.
Native of New Zealand, in the Bankian cabinet.

Fusco-Punctatus. Black; thorax and wing-cafes smooth, and spotted with brown. Fabr.
Found in the north of Germany.

Zebra. Black; wing-cafes variegated with white.
Fabr.
Native of Saxony.

Found on the ligulifusum levigulicumin.

Nubilus. Gray; wing-cafes with numerous darker, and nearly square spots. Fabr.
Inhabits Hamburg. The antennæ are black, with the club pointed.

Calca-
**CURCULIO.**

**Cercerius.** Black; antennae and legs rufous. Fabr.
Native of Austria.

**Dentifer.** Black; wing-cases with green dots. 
Inhabits Europe.

**Piculus.** Grey; wing-cases clouded, frilled with sub-ocelate dots. Fabr.

**Disulcatus.** Black; thorax and wing-cases rough; antennae with two grooves. Fabr.
Native of Italy. The snout marked with impressed grooves; thorax subfuscicorne at the sides.

**Pyzi.** Brown, changeable to yellow, red, brown, or green; legs rufous. Linn. Donov. Brit. Inf.
Not uncommon. Inhabits Britain, and most other parts of Europe.

**Dentifer.** Cincereous; snout grooved before; posterior thighs tridentate. Fabr.
Native of the Gulf of the Indies.

**Celticorns.** Grey, with the sides white; middle pair of thighs bidentate. Fabr.
Inhabits same country as the former.

**Argentatus.** Covered with fine green bronzed scales; antennae and legs brown. Linn.
Very abundant in May and June on the birch and alder, in Britain. Donov. Brit. Inf.

**Albo-lineatus.** Cincereous; thorax and wing-cases with white lines; snout black beneath. Fabr.
Native of Saxony.

**Atellalobides.** Snout and wing-cases with a single tubercle. Fabr.
Inhabits Brazil.

**Aeguisinus.** Green; thighs ferruginous; antennae long. D misd.
Native of Sweden.

**Anthracinus.** Black; wing-cases with fribute dots; thighs single toothed. Fabr.
Found by Scopoli in Carniola.

**Lucaris.** Brown; wing-cases rough, substipulate, rather downy and connected. Fabr.
Native of Italy.

**Caelifer.** Blue; antennae and legs fanguineous. Scopoli.
Native of Germany.

**Roeselli.** Thorax dull green, with a longitudinal white line; wing-cases fulvous, brown with raised lines. Fabr.
Inhabits same country as the preceding.

**Argentatus.** Silvery green; antennae and shanks rufous; thighs brown and clavated. Fabr.
Native of Europe.

**Hemorrhous.** Brown; antennae, legs, and tip of the abdomen rufous; wing-cases greenish brown. Native of Europe.

Section **** Lip livid; jaws livid and short; snout short. *Anthidius, Fabricius.*

**Albinus.** Black; front, and tail white. Deg. 
Inhabits Europe; rarely found in Britain. Donov. Brit. Inf.

**Latirostris.** Snout very broad and flat; tip of the wing cines white, with two black dots. Fabr.

**Albistrostris.** Snout very broad, flat, and white; wing-cases black, white at the tip, with a palmed black spot. Herbst.
Inhabits Saxony,

**Macroceros.** Grey; wing-cases cinereous behind. Fabr.
Native of New Holland.

**Scabrosus.** Black; wing-cases with raised ftrie, rufous with scattered black dots. Fabr.
Native of Europe.

**Undatus.** Black; wing-cases brown, with white waved stripes. Fabr.
A species of middle size, found on flowers in Africa.

**Varius.** Wing-cases frilled with alternate white and black dots. Paykull.

**Sericola.** Varied, with cinereous and brown, and raised hairy dots. Fabr.
Inhabits Germany, and is found in hedges.

Section ***** Lip rounded, horny; feelers very short. *Brachycerus, Fabricius.*

**Apterus.** Thorax spinous, with an impressed cross; wing-cases dotted with ferruginous. Fabr.
Inhabits India.

**Ocellatus.** Thorax spinous, excavated before; wing-cases cinereous, with black subfuscicorne dots. Fabr.
Native of Madagascar.

** Scalaris.** Thorax spinous, unequal; body black; wing-cases with rufous denticulated ftrie. Fabr.
Inhabits the Cape of Good Hope.

**Osbus.** Thorax spinous and unequal; body black; wing-cases red, with clouded black dots. Fabr.
Inhabits the Cape of Good Hope.

**Globosus.** Thorax spinous, and marked with five grooves; wing-cases smooth.
Native of India.

**Rostratus.** Brown; head and thorax cylindrical and narrow; wing-cases spinous behind. Fabr.
Inhabits the warmer parts of Africa.

**Inequalis.** Thorax rough; wing-cases with raised crimped lines; head bidentate. Fabr.
This is of a large size, and inhabits the Cape of Good Hope.

**Crispatus.** Black; thorax spinous and grooved; wing-cases cinereous, the outer angle crimped and toothed. Fabr.
A native of Barbary. The head is black; thorax punctured.

**Cornutus.** Cincereous; thorax and wing-cases subspinous; spines of the wing-cases with fuscicorne hairs. Olivier.
Native of India.

**Allocerus.** Cincereous; thorax spinous, grooved; wing-cases with two raised spinous lines, and between these two raised dots. Fabr.
Native of Africa.

**Retusus.** Grey-brown; wing-cases retuse, and toothed behind. Oliv.
Inhabits the Cape of Good Hope.

**Spectrum.** Brown; thorax and wing-cases globular. Oliv.
Inhabits same country as the last.

**Moricatus.** Thorax spinous, grooved, black, opaque; wing-cases with three raised crenated lines. Oliv.
Native of Hungary.

**Uva.** Thorax spinous, and unequal; wing-cases with numerous raised obtuse tubercles. Oliv.
This is of the middle size, and inhabits the Cape of Good Hope.

**Curcum, in Ancient Geography, a town placed by Ptolemy in the interior of Liburnia.**
CURCUMA, in the Materia Medica of the Arabian, the
name of the largelst eelantine; the roots of which, when
dried, were used by the dyers of those nations as a yellow
colorant, and by the physicians as debitters.
CURCUMA, in Botany, (from the Arabic name cur-
cor, or hircum.) Rofcoe. Linn. Trans. 8. 254. tab. 20.
fig. 12.
Err. Ch. Anther double, two-pored. Filament petal-
shaped, three-lobed; middle lobe bearing the anther.
Calx and order, monandria, monogynia. Nat. Ord. Schla-
Obst. As Mr. Rofcoe, in his reformed arrangement of
the plants belonging to this natural order, has stated that
the calyx, corolla, and neotry differ greatly in the different
species of the same genus, we have not attempted an de-
tailed natural character of curcuma. He observes that this
genus is not let distinguished from amomum and zingiber
by its general habit and influenence, than by the parts of
its fruitification. In all the species the leaves are radical;
but amomum and zingiber are both ealeufent. Curcuma
has a simple calyx and the flowers are enveloped in large
loose bractes, not in compact scales as in zingiber. From
some circumstance not caly to be accounted for. Linnæus
has characterized this genus as having four barren flammens,
besides the fertile one, which no subefquent observer has
been able to discover. Mr. Dryander supposes that the
genere character of Linnæus was derived from his C. ro-
tandia, now referred to Koempferia.
Wild. A latifolium; Lam.) "Leaves egg-shaped, acu-
minate; bractes emarginate." See Amomum Zedoaria
"Leaves egg-shaped, acuminate; bractes lanceolate, co-
bot. tab. 132. Lam. 2. (Amomum curcuma; Jacq. Hort.
Vind. 2. tab. 4. Curcuma radice longa; Herr. Ludgb.
tab. 259. Curcuma; Rumph. Amb. 5. 162. tab. 67.
Manjella-kaa; Rheed. Mal. 11. 21. tab. 11. Cannae-
rus radice croceae, five curcuma officinarum; Tourn. 567.
"Leaves ovate-lanceolate, bractes plicatulate." Root pe-
rennial, creeping, fibby, palmate with cylindrical branches,
and jointed with parallel rooting circles; bark thin, pale;
fibb suffron-coloured, with a bitterish taste, and a some-
what fragrant smell. Stem none. Leaves broad-lanceolate,
large, quite entire, smooth, annual, pale-green, densely
furrowed with oblique sinister lines; petioles long, erect,
dilated at the base, mutually supporting and clapping each
other. Stipe external, three inches long, slender, nearly
eerecet, almost naked, approximating to the cluffer of leaves.
Spire thick, somewhat egg-shaped, three inches long;
scapes membraneous, a little acute, whitish, half-foreminding,
united laterally below the middle. Flowers suffron, white,
with a yellow nectary, one within each scale of the spike.
Calyx. Perianth superior, bid; segments oblong-egg shaped,
erect, concealed by the scales of the spike. Corolla
monopolious, tubular-shaped; tube slender, equal to the
perianth, dilated towards the top; border four-parted; seg-
ments nearly equal in length; two lateral ones obtuse, un-
dulate-plaited; uppermost acute, incurved; lowest broader,
bid, with roundish segments. Nectar large, incurved,
three-lobed and the middle lobe emarginate, aduate at
the base to the exterior segment of the corolla. Stamens.
Filament one, broad, flat, short, nodulated at the top, standing
on the uppermost segment of the corolla; anther not closely
adherent to the filament (exotia), somewhat cuneal, bid,
with an awl-shaped appendage hanging out on each side.
Fijil. Gem roundish; style capillary, equal to the fla-
men, included in the groove of the anther; stigma conico-
pericarp. Capsule roundish, smooth and even, three-valved,
three-seeded. Seeds round, few. We have literally trau-
slated the above description from Loureiro, because it was
taken from a recent plant which grew in its native soil,
though it does not accord with Mr. Rofcæ's ideas con-
cerning the anther. Loureiro seems to have confined the
term to the upper or middle lobe of what Mr. Rofcoe calls
the anther, and to have confided all the lower part, with
its two lateral lobes, as one of the segments of the border
of the corolla; but in this case he makes, through an over-flight,
has committed an error in his description of the situation
of the filament, and have written lachrymata corollæ
inflentes, instead of lachrymæ inflantes, &c. We are rather
confirmed in our conjecture by an attentive consideration
of Koenig's description, as published by Rumphius, and translated
by prosector Martyn (as we have not the original at hand);
and which Mr. Dryander affirms we belongs to the prefect
plant. See Linnæan Transact. vol. 2. p. 214. It
stands thus: Tube of the corolla circum, or a little bent in
round, smooth, suffron, white, above the middle bell-shaped,
notowever compressed, keeled at the back; border double,
each three-parted. Filament single, erect, lanceolate-ovate,
between the two dorsal segment growing to the dorsal border,
flattish, somewhat convex in front, marked with a line be-
hind half the length of the approximating segments, flatter
than they, but of the same colour. A native of the East
Indies, China, and Cochinchina, where also it is generally
cultivated for the sake of its root, which is the turmeric
of the shops. See Turmeric. 4. C. paulla, Mart. 3.
Loureiro Cochlin. 1. 5. (Curcuma agrellis; Rumph. amb.
p. 154.) "Leaves lanceolate; bractes short; bulb
knotty." Roots perennial, horizontal, creeping, oblong,
cylindrical, twirled, knotty, pale within and without,
flattish, with little smell and taste. Plant annual, three feet
high, flemefs, erect. Leaves lanceolate, large, with nu-
umeros oblique fander furrows; petioles dilated at the base,
embracing the inner ones. Stipe external, eight inches
long, cloathed with short bractes; spike oblong; scales
ovate-lanceolate, lax, reflexed, reddish, one-flowered;
corolla yellowish white, four-cleft; neotary three-lobed; fla-
nem one. A native of China about Canton and Coch-
chicka. The pounded root is used externally in cafes of
contusion and local pains. Loureiro has given no description
of the filament and anther: but its want of a stem and
general habit seem to indicate that it really belongs to the
same species as it is lettered by Mr. Rofcoe.
CURD, in Rural Economy, is the coagulum, or whit-
ish solid substance produced from milk, from which cheese
is formed. See CHEESE and DAIRYING.
CURD-MILL, is a kind of mill contrived for the pur-
pose of reducing and breaking down the coagulum or curd,
in making cheese. It consists of two cylinders or rollers of
about six inches in diameter, and fifteen inches long; one
being placed above the other in a thin deep vessel, as in the
common cider mill of the more southern districts. The su-
perior upper roller is fluted with rows spikes an inch in
length, and an inch and half asunder, while the lower one
is closely beeted with bevel-headed nails, rining with a sharp
angle about a tenth of an inch out of the surface of the
roller. The curd, after being partially broken over, is put
into a hopper, the bottom of which is formed by the upper
roller, which, by working against the side of the box, pre-
presses the curd for the lower roller, which being finer, and
working closer, reduces it to small particles or granules.
The rollers are turned by a crank placed on one end of the
The axe of the upper one; the opposite ends of them having each a wood-toothed wheel, which wheels work in each other, by which means the lower one is turned with facility. This is a sort of machine which must be highly useful in large cheese dairies, where the breaking of the curd by hand is a business of vast labour, and which requires much time. It is principally employed in the final breaking down of the curd, by which it is rendered more fine and equal than could be done by hand.

**Curdistan, or Kordistan, in Geography.** A mountainous country of Asia, whence fall the different branches of the Tigris, which, surrounding the upper part of the great Zab, pitts to the southward, as far as the frontier of the Irak-Aolem, or Persia. Some geographers consider it as one of the divisions of the Turkish province of Diarbekir, anciently known by the name of Alfina. It lies on the east side of the Tigris, towards Persia, being bounded by that kingdom on the east, and by the Tigris on the west, by Irak on the south, and Turecmania on the north. Towards the south it is narrow, scarce; exceeding 90 miles in breadth; but northwards it stretches nearly 320 miles from east to west, that is, from the 41st to the 47th degree of east longitude; and from north to south it reaches from 39° 30' to 37° 20' N. latitude. The mountain of Costras separates it from Persia on the E., and the Tigris on the W., from Mesopotamia and Chaldæa. According to ancient accounts this country was rich and fertile; but it is now destitute of human habitation, and barren, abounding with deserts, except in those few parts which lie near towns, and which are somewhat better cultivated. It was in former ages the constant field of battle between the Parthians and Romans, and at a later period between the Turks and Persians, which served to desolate and depopulate it, and to render it waste, and unproductive. Its chief towns and hamlets are Britis, the capital, Scheresal, Abella, Harpal, Nineveh, Rechob, Rilen, Van, and Holwan. It is inhabited by the Curds, who are divided into tribes, which are dispersed over the Lower Asia, and have widely extended themselves, especially within the last hundred years. Volney suggests that Curd and Cardare the same, and that the habitations of the Curds are among the Gordian mountains, or the Cord-leni, where, according to the Chaldæan Barofos, and the Armenian Maribas, cited by Moses Chorenienis, Xerophus heard, after escaping from the deluge. They are supposed to be the same people who are mentioned by Xenophon under the denomination of Cardgalabi, and who opposed the retreat of the ten thousand. The Curds call their chief, that thought to be the king of the Persian empire, they had constantly bravthe power of the Great King, and the arms of his satraps. In their modern state they are little different from what they were formerly; for though they are apparently tributaries of the Porte, they pay little respect to the orders of the grand signor, or his pachas. According to the account given of them by Niebuhr, who travelled in these countries in 1767, they are subject, in their mountains, to a sort of feudal government, similar to that which is observed among the Druzes. Each village has its chieftain, and the whole nation is divided into different and independent factions. The disputes inseparable from this state of anarchy have detached from the nation a great number of tribes and families, which have adopted the wandering life of the Turk- mans and Arabs. These Curds are dispersed in the Diarbekir, and over the plains of Arzoum. Erwan, Sivas, Aleppo, and Damascus; and all their tribes are estimated to exceed 140,000 souls, that is, 140,000 armed men. Like the Turkmen, these Curds are pastors and wanderers; they are often shifting their position in search of pasture for their numerous flocks and herds; and whilst the men roam in quest of plunder, the women are occupied in making butter and cheese, and training up the children to the trade of the fathers. Their tents are large, and formed of a sort of coarse brown cloth, which serves as a covering to their hovels, which are constructed for temporary use of fane huddles, disposed in a square form, and having the floor walled, so as to answer the purposes both of bed and board. When they disband in order to migrate, they take their huts to pieces, and load their oxen and cows with them, and also with their children, and household utensils. The children are used to go aimlessly about in the coldest weather. The men are generally very well mounted, and take great care of their horses, which are commonly very fleet in their motion; the lance is their chief weapon. The women ride either on horses or on oxen. Both men and women are naturally stout and nimble, but not at all agreeable in their persons, having very small eyes, wide mouths, bad complexions, very black hair, and a very fierce and forbidding aspect. The Curds differ from the Turkman in some particular customs. The latter give their daughters a marriage portion; the former receive a premium for them. The Turkmen pay no respect to nobility or antiquity of extraction; the Curds highly honour it. The Turkmen do not feed; the Curds are almost every where considered as plunderers; and they are therefore much dreaded in the neighbourhood of Aleppo and Antioch, where they occupy, under the name of Bagdadlis, the mountains to the E. of Belam, as far as near Xes. In this pachalic, and in that of Damascus, their number exceeds 20,000 tents and huts; for they have also fixed habitations. They are reputed Mahometans; but they never trouble themselves about religious rites or opinions. Several of them, distinguished by the name of Yezid, worship Deity or Satan, according to the ancient system of the good and evil principles, which has more or less prevailed in the Diarbekir, and the frontiers of Persia. The language of the Curds is divided into three dialects. It has neither the aspirations nor the gutturals of the Arabic, and Mr. Volney says that it does not resemble the Persian; and, if this be the case, it must be an original language. Considering the antiquity of the people who speak it, and that they are related to the Medes, Affyrians, Persians, and even the Parthians; Volney conjectures, that a knowledge of this tongue might throw some light on the ancient history of these countries. See Volney's Travels, vol. i. p. 2.

**Curdling, the coagulating or fixing of any fluid body; particularly milk, by means of rennet.** See Cheese.

Paufianus says, that Aritanus son of Apollo, and Cyrus daughter of the river Penuseus, were the first who found the secret of curdling milk.

At Florence they curdle their milk for the making of cheese with artichoke flowers; but in most of the remnant used for the same purpose among us.

The Difaltes, a people of Macedonia, Rochfort observes, live wholly upon curdled milk, i.e. curds. He adds, that curds are the whole food of the people of Upper Auvergne in France, and whey their only drink.

Women newly delivered are subject to have their milk curdled, converted into little grains, in their breasts, which occasion violent pains, with a swelling in the back. It is owing to the want of being sucked; whence the method of removing, and preventing it, is apparent. **Cure, in Geography.** A small town of France, in the department of the Yonne, on the river Cure, which falls into the Yonne at Cravan.

**Cure, in Medicine.** See Palliative cure.

**Cure of souls, a benevolence of the charge**
charge and guidance of the souls of the people within a certain extent of ground, called a perisoph. Such are a vicar, a rector, &c. in contradistinction to a "prebend, a dean, a chanter, &c.

Cures, fine. See Sire.

Cure, in Falernum, the name with Cauffman: which see.

Curel, in Geography, a town of France, in the department of the Upper Marne, one league N. of Joinville.

Curena, in Aristophanes, the name of a fifth of the mullet kind, but of a remarkable size, growing to two feet long, and having a very large movable upper lip, the under one being small, triangular in figure, and scarcely visible, being something thinner than the upper. It's eyes are large, and its fins of a fine silvery white: in all other respects it resembles the common mullet. See Mullus.

Curemonte, in Geography, a town of France, in the department of the Correse, and district of Brives, 4½ leagues S.E. of Brives.

Curena, or Curna, in Ancient Geography, a town of Asia, in Media.

Curensi, or Currini Litus, a place on the coast of Spain, with a gulf over against the town of Gades, according to Piny: supposed by Hardouin to lie between the Grandquill and the Quindale.

Cures, or Cures, a town of Italy, which was anciently the capital of the Sabines, who from hence afforded the name of "Curtius." After the treaty concluded between Romulus and Tatius, which produced a coalition of the two nations, the Sabines were called Romans, and the Romans Quirites, or Sabines. However, that name, as well as Tribus Quirina, was applied, with the greatest propriety, to that canton of the Sabines inhabiting Cures, and the district appertaining to it. The principal deity worshipped here seems to have been June Quiris, or Curis. She was represented with a spear or lance in her hand; from which circumstance the received the appellation of "Quiris or Curis," a word in the Sabine language equivalent to the Latin "hafta." Macrobius mentions a Sabine deity under the name of Janus Quirinus, supposed to be the "Pater Curtis," held in high veneration among the Falisci.

Cures was situated in the territory now called Correse, or Curese, upon a small river of the same name, which falls into the Tiber above La Fasca. In the days of Strabo it was a large market town, and was afterwards totally deserted, that its situation cannot now be ascertained. Cluverius, however, believed, that the ruins of it were to be seen in his time, about a mile from the town of Saltice. If this be admitted, it stood near the banks of the river Heimelis, the P'Asia of the moderns. Hofstadius thought that Cluverius was mistaken in fixing upon a place now called "Il Velcroso" as the site of the ancient Cures. The abbe Chappuy, availing himself of some circumstances, which we need not recite, discovered on the Salar way, where the church of St. Anthime stood in the midst of a wood, very considerable ruins of Cures. These ruins were found in the territory of Fare, at a place called "Areoli," on the left bank of the river Correse.

Curetes, in Antiquity, a sort of priests, or people of the isle of Crete; called also Corybantes.

The name Curetes, according to Strabo, was given them because of their cutting off the hair before, to prevent the enemy's taking hold thereof: the word being Greek, curetes, of carya, tansure, from carya, tondo. Others derive it from carygophos, the feeding or educating of a child; because they are said to have educated Jupiter.

The Curetes are said to have been originally of Mount Ida, in Phrygia; for which reason they were also called Idai Dactylis. Ovid says, they had their origin from a huge flower of rain: Lucian and Diodorus Siculus represent them as very expert in calling of darts; though other authors give them no weapons but bucklers and pikes: but all agree in furnishing them with sabers and cestanettes; and relate, that they used to dance much to the noise and clanging thereof.

These Curetes are said to have inhabited the mountains, under the shade of thick trees, caves, and other places, which naturally afforded shelter and covering, as the art of building houses was not then practised. They were very industrious, and invented a variety of things that proved highly useful to mankind; they first taught how to manage flocks, to gather honey, to tame horses, to hunt, and to cast darts. They formed men into societies and communities, and shewed them, by their example, the happiness of a peaceable and orderly life. They are likewise said to have invented swords and helmets, and to have introduced the custom of dancing in armour. By the noise they made in these dances, they prevented Saturn from hearing the cries of Jupiter when he was an infant, and, by that expedient, saved him from being destroyed by his father. The Curetes described by Diodorus Siculus (lib. v. c. 58.), and Strabo, (lib. x. p. 464.) originally Phrygians, who accompanied Cadmus out of Phrygia, some of them settling in Phrygia, where they were called "Corybantes," some in Crete, where they were known by the name of "Idai Dactylis," and some in Rhodes, where they bore the name of "Telchines." Accordingly, Vesius (De Idololat.) distinguishes three kinds of Curetes; those of Aetolia, who inhabited Phoron, those of Phrygia, and those of Crete, who were originally derived from the Phrygians.

The first, he says, took their name from kypa, tonfur, because, from the time of a combat wherein the enemy feized their long hair, they always kept it cut; but they are said to have suffered the hinder part to grow, that they might be caught by it if they offered to run away; those of Phrygia and Crete, he supposes, were so called from kypa, young man; because they were young; or because they surfered Jupiter when he was young.

Clemens Alexandrinus (Stromat. lib. i.) calls the Idai Dactylis barbarians, that is, strangers; and says that they were the first who brought letters into Greece, Phrygia, and Crete; adding, that by their assistance Minos built a fleet, and gained the sovereignty of the sea. According to the authors now cited, the Curetes and Idai Dactylis were the same people, and did not settle in Crete till the time of Minos. Dohart (Canaan, lib. i. c. 15.) traces them to Palatina, alleging the similarity of their name to that of the Crethen or Cerethites, a Phyllite tribe. See Crete.

Some authors, however, give a different account of the Curetes; according to Pezon, and others, the Curetes were, in the times of Saturn, &c. and in the countries of Crete and Phrygia, and among the Titanie Celts, what the druids and bards were afterwards among the Gauls, &c. i.e. they were priests who had the care of what related to religion, and the worship of the gods.

Hence, as in those days, it was supposed there was no conjunction with the gods but by divinations, auguries, and the operations of magie; the Curetes pulled for magicians and enchanters; to thele they added the study of the flars, of nature, and poetry; and lo were philosophers, astronomers, &c.

Such were the Curetes, and after them the druids; with this
this difference, that the Curetes, in the time of the Titans, went to the wars; for which reason they were armed, and were wonderfully estraordinary in dancing cæs-à-pied, shaking their bucklers and javelins: from which action, Pex-ron conjured, they took their name Curetes; curr, in the Celtic, being the name with κυρός in the Greek; q. d. fbriske, or beat.

It is uncertain, however, whether they went to the wars, and encouraged the combatants with their noise and dances, or were exempt from that duty as the druids were; but they must have been different from the druids, who, though of the same order, were, nevertheless, obliged to excite and encourage the people to war with their poetic compositions and musical performances.

According to Kircher, the Curetes were what the spirits are among the Cabalists, the powers among the Platoniists, and the genii among the Egyptians.

CURFEU, d. couvre-feu, a signal of retreat, given in cities taken in war, &c. to advertise the inhabitants to go to bed, and not to stir out any more.

The curfew-bell, wherewith the signal was anciently given, was sometimes hung up as a punishment of faction. Fauquier says, it was called carfon, and garefon; as being intended to advertise the people to secure themselves from the robbers and dbauchees of the night.

The most ancient curfew was that established in England by William the Conqueror; who appointed, under severe penalties, that, at the ringing of a bell at eight o'clock in the evening, every one should put out their lights, cover, or rake up their fires, and go to bed. Whence, to this day, where a bell is accustomed to be rung about bed-time, it is called curfew-bell. It was abolished by Henry I.

In reference to this subject, we may observe, that William of Malmbury says, in his account of Henry I., "that he restored, in his court, the use of lamps in the night, which had been intermitted in the time of his brother." This is the single allusion in any historian before Polydore Vergil, which seems to allude to the curfew, supposed by that author (lib. ix.) to have been introduced by an ordinance of William I., and mentioned by some later writers, as a mark of the slavery, in which he held the conquered English. It is plain, however, from these words, says lord Lyttelton, (Hist. Henry II. vol. i. p. 473.) that William of Malmbury thought it was introduced by William Rufus, and extended to the whole court, that is, to the Norman nobles, as well as to the English, and, consequently, was no proof of the servitude of the latter. M. Voltaire says (Univ. Hist. t. i. p. 240.) "that the law, far from being tyrannical, was only an ancient police, established in almost all the towns of the North, and which had been long preferred in the convents." He adds this reason for it, "that the houses were all built of wood, and the fear of fire was one of the most important objects of general police." From the expression of William of Malmbury, above cited, one should think that, in England, it had only been practised in the king's court, or was taken off only there by Henry I. And the foregoing words, effeminatos curius propellens, which introduce the whole sentence, and have a connection with it, appear to imply, that some unnatural crimes had been committed in the court, under the cover of the darkness; on which account the use of lamps was there restored by that prince. Upon the whole, as Polydore Vergil is too modern a writer to be of any authority, and all the ancient historians are silent about it, lord Lyttelton thinks there is reason to doubt, whether the law, or regulation he mentions, was made by William I., or was ever so general as he represents it. The curfew-bell may have been only rung in the convents, and probably took its name from an old practice there, of putting out their fire and candles at 8 o'clock every night. In the "Leges Burgorum" of David I., king of Scotland, mention is made of it as marking the time when the watch should go out. As, therefore, the practice of it existed in Scotland, so left than in England, and as it was also a law of police, which William had previously established in Normandy, it could be no badge of a conref, nor any evidence of a nation being enslaved.

CURFEU, Fr. An alarm bell. Formerly in strong, enclosed and fortified places, and particularly in frontier towns, it was customary to have a high tower or fleecle, from which they could discover the movements of the enemy. He who observed, or kept a look-out, rung the large bell as soon as he discovered or saw from it any thing extraordinary. If he saw infantry coming towards the place he hoisted colours on the side by which it was approaching; but a landlord, if he perceived cavalry; and both, if he observed infantry and cavalry. The moment he perceived fire in any place he also rung it. It was by the beffro, or the large bell in the said tower or fleecle, that they rung the curfew, when an officer went immediately to see the gates shut. In the morning the fame bell was rung for the opening of them. After the sounding or ringing of the curfew, the inhabitants were not permitted to leave or go out of their houses.

CURGIA, in Ancient Geography, a town of Spain, in Bética. Ptol.

CURGIE, in Geography, a village of Scotland, with a small harbour, on the coast of the county of Wigton, in Luce bay; 7 miles N. from the Mulf of Galloway.

CURGOS, or CURGOS, a large island of Egypt, situate on the Nile, several miles long, full of villages, trees, and corn, opposite to which is the mountain Gibbany, a scene of ruins consisting of broken pedestals, plainly defined, says Bruce, for the statues of the dog, and some pieces of obelisk, with hieroglyphics, almost totally obliterated: this is conjectured by the fame traveller to be the ancient city of Mercib, whose latitude should be 16° 26', and in this island, as he conceives, was the observatory of that famous crater of astronomy. Curgos, he says, should, probably, be Purgos, the Ethiopians not being able to pronounce P, and not having such a letter in their alphabet; and Purgos was the tower or observatory of that city. Travels, vol. iv. 539.

CURIA, in our Ancient Customs, was sometimes used for the perfons, as feudatory and other customary tenants, who did their fuit and service at the court of the lord. And it was usual for the kings of England to furnish the bishops, peers, and great men of the kingdom, to some particular place, at the chief festivals in the year; and this assembly is called, by our historians, curia; because they were consulted about the weighty affairs of the nation: whence it was sometimes also called solennis curia, generalis curia, Augustalis curia, and curia publica, &c.

CURIA, in Ancient Geography, Curic, a considerable town of Rhetia.

CURIA, Francesco, in Biography, a Neapolitan painter, was born about the year 1538, and studied under Leonardo da Vinci. The churches of Naples possess many of his works, which, although they somewhat partake of the mannered style introduced by Vafar and the Zuccheri, are much esteemed for the spirit with which they are composed, the beauty of character in the heads, and truth of colouring. His
CURIA

His altar-piece of the circumcision in the church of the Picta, was, by the common consent of Spagnolletto, L. Giordano, and Solimene, ranked amongst the finest productions of the pencil which Naples could boast. He died about the year 1610. Dominici.

CURIA, among the Romans, denoted a portion, or division of a tribe.

In the time of Romulus, a tribe being the third part of the 3000 foot of which his columns consisted, comprehended ten curiae, besides 300 horsemen, each curia being 100: so that this legislator made the first division of his people into thirty curiae or wards. These curiae were again subdivided into 10 decuriae.

Over the curiae were appointed officers, called curiones, and over the decuriae, others called decuriones: each curia and decuria having its peculiar commander. Romulus afterwards divided his small territory, which was not above five or six miles in extent, into three unequal parts; one of which was appropriated to the expenses of religious worship, another referred for the king's revenue and the exigencies of the state, and the third, which was the most considerable, divided into 30 portions, corresponding to the 30 curiae. In the forming of a senate, consisting of 100 persons, each tribe named three senators, and each of the curiae the like number, amounting in all to 99, and Romulus named the 100th, who was the head or prince of the senate, and the chief governor of the city, when the king was in the field. (See Senate.) Romulus also ordered the curiae to choose for him a guard of 300 young men, ten out of each curia, who were called celeres, which fee. In regulating the concerns of religion, he ordained, that each curia should have its own temple, and its peculiar gods and priests. He who presided over each curia was called Curio, and he who presided over them all Curio Maximus.

Afterwards, curia, or domus curialis, became used for the place where each curia held its assemblies for performing divine service.

Hence, also, curia passed to the senate-house; and it is from hence the moderns come to use the word curia, court, for a place of justice, and for the judges, &c. there assembled. See Court.

Varro derives the word from cura, care, q. d. an assembly of people charged with the care of public affairs; others deduce it from the Greeks; maintaining, that as at Athens they called apox the place where the magistrates held their affilies, and the people used to assemble: apox, again, may come from apox, authority, power; because it was there the laws were made.

CURIA Curia Aquae, In Law, a court held by the lord of the manor of Graveford, for the better management of barges and boats using the passage on the river Thanet from thence to London, and plying at Graveford bridge, &c. mentioned in fl. 2 Geo. II. c. 26.

CURIA Domini, the lord's-house, hall, or court, where all the tenants attend at the time of keeping courts.

CURIA militia, a court so called; anciently held at Caffbrooke castle, in the isle of Wight.

Et idem dominus Williamus de infuslue faciebe debiti sedem ad curiam dominii caferi de Caffbroce, de tribus septimis in tres septimis, in curia qua vocatur curia militia.

CURIA Penticiarum, a court held by the sheriff of Chester, in a place there called the "Pentice," or "Pentice," probably deriving its denomination from its being originally kept under a pent-house, or open shed, covered with boards. Blount.

CURIA, Riches in. See RICUS.

CURIA Maris, in Geography, an island in the Arabian Sea, near the SE. coast of Arabia; 40 miles long, and 10 broad. N. lat. 17° 30', E. long. 55° 14'.

CURIAE Auxilium, in Law. See AUXILIUM.

CURIAE, in Geography, a bay in Terra Firma, S. America, on the N. Sea.

CURIALITAS Angliae. See CURTEYS OF England.

CURIAM, Accedas ad, in Law. See ACCEDAS.

CURIANUM, in Ancient Geography, a promontory of Gallia Aquitanica, according to Ptolemy; supposed by M. D'Anville to be Cape Fernet, between the Adour and the Garonne.

CURIAS, Cape Caviati, or Delle Gatti, a promontory of the isle of Cyprus, at the extremity of the most advanced peninsula to the south of the island.—Also a town situated on the above-mentioned promontory.

CURIATA, Comitia. See COMITIA curiata.

CURIATH, in Roman History, three brothers, selected by the Alban general as champions for a contest with three other brothers, named Horatii, chosen by Tullus Hostilius, king of Rome, in order to decide the difference subsisting between Alba and Rome. A. U. C. 67, B. C. 667. On an interview between the two commanders of the hostile armies, the Alban general, declining to terminate the dispute by a single combat with Tullus Hostilius, according to the proposal of the latter, suggested that three champions should be chosen out of each camp for determining the quarrel. As soon as the agreement was known in the two armies, it excited a strong emulation among the young warriors for the honour of being chosen to this important combat. During the intermediate suspense, Fufcitus cast his eyes upon three Albas, of the circumstances of whole birth, Dionysius Heliacarnasatus (lib. iii.) has given the following account: Sequinius, an illustrious citizen of Alba, had two daughters; one married to Curiatus, a citizen of Alba, and the other to Horatius, a citizen of Rome. These two fillers were brought to bed on the same day, each of three male children, who were at this interesting period in the flower of their age, and remarkable for their strength and dexterity. The Alban general having fixed on the three Curiati, the king of Rome having his attention directed to the three Horatii, proposed the matter to them, who confided their father on the occasion. The father, dreading the event, and apprised of the betrothment of one of his daughters to one of the Curiati, hesitated for some time in complying with the wishes of his sons; but the love of his country ultimately prevailing over every other consideration, he left his sons to their own choice. When he was informed that in imitation of the Curiati, they preferred a glorious death, or an important victory, to an inglorious life, he lifted up his eyes to heaven, and, embracing his children, exclaimed, "I am a happy father!" and then commanded them to announce to the king his consent. The combat of the Alban general and the three Alban champions provided in both camps, Tullus led the former, and Fussius the latter, whilst the people flourished the way, as they passed, with flowers, and put garlands on their heads: for they were confounded as victims, who had voluntarily devoted themselves for their country. A plain lying between the two camps was chosen for the place of combat; and the two kings advanced with their champions and lancers to the middle, where, before the combat began, they concluded a treaty which served as a pattern for most of the treaties that were ever after made by the Romans.
menced the hostile attack, they embraced each other with all the expression of the most tender and sincere friendship. The epauletts shed tears at the sight, and muttered complaints against the kings for causing such affectionate relations to shed the blood of one another. The tenderness of the young heroes, however, did not abate their courage; each of them refused his arms, and selected his adversary. The combat then began with great impetuosity; the noise of their arms was heard at a great distance; and the air re-filled with a confused mixture of thunders and acclamations from both camps, as either of the combatants appeared to have the advantage. The victory was long held in suspense, by the skill and valour of the combatants. At length the eldest of the Horatii received a mortal wound, and fell. At this sight the Albans triumphed, and the Romans were thrown into great confusion, which was soon followed with despair when they saw the second Horatius, pierced through by another of the Curitii, expire on the body of his brother. However, the three Alban brothers were wounded, and the surviving Horatius appeared unhurt and vigorous. Thinking he was an unequal match for the three brothers together, he had recourse to a stratagem, and retreated as if he fled: Upon this the Curitii purified him at different distances as their respective strength allowed; Horatius, perceiving the success of his stratagem, and that they were separated from each other, hastily returned, and flew them all (ffly), before one could advance to the assistance of the other; and, elated with his victory, seizes the spoils of the vanquished—the Roman camp in the mean while retreating with joyful acclamations in honour of their hero. Thus Rome gained the superiority over Alba, its mother-city; which Fulcetius acknowledged on the field of battle, faluting Tullus as his sovereign, and asking him what were his commands. Tullus replied: "I command you to keep the Alban youth in readines to march at my orders, in case I make war with the Vetulones."

As Horatius was returning to the city, he was met by his father, who, perceiving him loaded with the spoils of the three brothers, among which was a military robe which he had worn with his own hands for the Curitii to whom she had been betrothed, could not forebear tearing her hair, beating her breast, and reviling her brother with the most reproachful and provoking words, for imbruing his hands in the blood of his relations. Horatius, flushed with his late victory, and enraged at his father's unseasonable grieve, killed her upon the spot, and then proceeded to the house of his father; who not only approved the action, but would not allow his daughter to be buried in the sepulchre of the Horatian family. However, upon the return of Tullus to Rome, Horatius was brought before the tribunal, to take his trial. Thinking it dangerous to relax the rigour of the laws in favour of conquerors, they insisted on his being tried, and condemned, if found guilty. Tullus, anxious to manifest his regard for the laws, and at the same time facetious for favoring young Horatius, and also forefearing that he would be censured by some for condemning; and by others for acquitting the criminal, externally changed the affair into a state crime, the cognizance of which did not belong to him; but to two commissioners, or duumvirs, whom the king was to name. The crime was notorious, nor was it disowned by the prisoner; the duumvir, therefore, without delay, pronounced sentence against him, in these words: "We judge you to be guilty of treason; go,riter, and tie his hands." As soon as judgment was given, Horatius, by the king's advice, appealed to an assembly of the people, who revoked the sentence of the duumvirs, rather through admiration of his courage, says Livy, than for the justice of his cause. However, that the crime might not escape wholly unpunished, Horatius was condemned to pass under the yoke, an ignominy with which it was usual to treat prisoners of war, who had surrendered their arms. The king also appointed expiations to pacify the anger of the gods, provoked by this violation of the laws. Besides, the pontiffs erected two altars, one to Juno, and the other to Janus, which were still remaining in the time of Augustus, together with the yoke, known by the name of "Sororum titulum," under which they made the criminal pass. Liv. lib. i. cap. 25. 26. Dionyc. Hal. lib. iii.

CURICACA, in Ornithology, the name of a Brazilian bird, the wood-pelican of Catelby, and wood ibis of Pennant. See Tantalus locutior.

CURICTA, in Ancient Geography, an island of the Adriatic Sea, on the coast of Illyria, according to Pliny and Ptolemy; called by Strabo Cypratica; the present isle of Vegovia.

CURICUM, a town of the fore-mentioned island, now called Vegia.

CURICUM, a town of Alba, in Flavania.

CURIGLIANO, in Geography, a river of Naples, which runs into the gulf of Tarento; 5 miles N.E. of Corigliano.

CURIMATA, in Ichthyology, a name by which some authors have called the lavaretus, a small fish, of a fork of middle nature, between truttaeae and the herring kind, and caught in the American and German lakes.

CURING, is used for preferring fish, flesh, and other animal sublances, by means of certain additions of things, to prevent putrefaction. One great method of doing this, is by fumoeaking the bodies; that is, the making them to imbibe a great quantity of vegetable fumes; for this is usually done where wood is burnt. The reason of this sort of preparation is easily seen by the curious enquirer, since wherever wood, or any vegetable of the acid tribe is burnt, the acid particles go off with the smoke, and in this form penetrate into, and lodge themselves in animal sublances exposed thereto; by which means this smoke acts upon them in the same manner that the fumes of spirit of niter would do: and which, as it is a very powerfull agent that stimulates kyps, herings, &c. to a redness in the drying, is a subject worthy of enquiry. Shaw's Lectures, p. 152.

CURINI, in Botany, or Curiginii. Lam. Enc. Rheed. Mal. 7. 47. tab. 45. Baccifer indica; Rai. Hilk. iii. 357. A plant little known, which has somewhat of the habit of a menispernum, and seems to have some affinity to ciusus. Stems cylindric, farmentous, somewhat woody, leafy. Leaves opposite, petiolated, oval-acute, entire, soft, smooth, whitish-green above, deeper green underneath, with somewhat projecting nerves. Flowers small, yellowish-white, axillary, forming branched corymbs shorter than the kaves; petals five, green without, white and woolly within, a little hooked at the tip; filaments five, small; germ superior, roundish. Fruit. Drupe oval-blong, bright green, with whitish and rather bitter flesh; nut hard, whitish; kernel white, slightly bitter, and astringent. A native of the East Indies.

CURIOUS, Caius Scriboni, in Biography, a Roman orator, distinguished for the part which he took in the civil war between Pompey and Cesar. He was at first a partisan of Pompey, and elected to oppose the ambitious designs of Cesar; but being of licentious manners, and overwhelmed with debts, he could not withstand the temptation of a high
Curio, Cornelius Secundus, was born at Cherico, in Piedmont, in the year 1503. He was educated at Turin, and made great proficiency in polite literature. He had not attained his 20th year, when he became attached to the doctrines of Zuinglius and Luther, and his zeal in their defence caused him to be thrown in prison, where he was confined for several months. Persecution did not in the least abate his ardour; his disposition being frank and engaging, he was diffmifted the place of confinement, with recommendations that might have promoted his worldly interests; but having access to the relics of the monastery in the abbey of St. Benigno, he conceived and executed the plan of carrying away the holy shrine, and leaving in its place what to him was more holy and efficacious, the Bible, inscribed with these words, “Hec est arca fidei, ex qua vera sefificari oracuia lieet, et in qua vere fum fanctorum reliquie.” The day, however, was approaching, when the fraud would be discovered, and when, he was aware, the fury of the populace would not permit him to escape with his life, if he were even suspected of it; he, therefore, thought it prudent to retire, and we find him afterwards at Milan, and other cities of Italy. At the former place he resided many years, employed in the arduous and honourable task of education; but what raised his reputation the highest, were the courage and humanity which he displayed during a dreadful plague which ravaged that city. Neither dread of danger, nor the disgusting nature of the duties prevented him from visiting the sick, and supplying the various wants of the poor and the dying. In 1530, he married, and afterwards met with very unhandsome treatment from his own relations. At Turin he was, after the lapse of many years, arrested, on account of the shrine, and imprisoned. It was supposed that the most rigorous punishment would befal him, but he contrived to escape, went hitherto to Milan, and afterwards to Pavia, where he gave lectures on the belles lettres; but his enemies were ever on the alert, and the inquisitors had orders to seize him; his schoar, however, and the people, in general, entertained for him so high a respect, that they formed for his defence a sort of bodyguard; and thus he lived three years, when the pope himself interfered, and he was obliged to seek a retreat in Venice, and from thence he went to Lucca, where he not only met with a favourable and kind reception, but was appointed professor. Sarcely had he been at Lucca a single year, when orders were sent to the senate to arrest him; from thence he received intimation of the design, and he determined to quit Italy for ever. He went to Launfance, and was chosen principal of the college: his wife and children he had left at Lucca, till he knew whither he might conduct them in safety. When he thought himself secure, he went to Fils, in order to bring his family to his new residence; here, while he was at dinner in a public inn, he was arrested; the officer, out of respect probably, came alone into the room, to make known his business: Curio, advancing with his knife in his hand, so alarmed him, that he fainted, and the professor, who everpossessed great presence of mind, walked down stairs, through the attendants, who were not acquainted with his person and escape. He got to Launiance in safety, and had the satisfaction of taking with him his wife and family, whom he met with on his road. He resided at Launiance for years, and in 1547 he removed to Bafli, where he held the office of professor of eloquence and the belles-lettres with the highest reputation for more than twenty years. He died, Nov. 23, 1569, in the 77th year of his age. He was author of many works written and published in the Latin, Italian, and French languages. On theological subjects, the most important were “Christiæa religiosæ institutio, et de liberis educandis,” and “De amplitudine Regni Dei;” in the latter he endeavoured to prove that the number of the elect was greater than that of the reprobated: for this, one might suppose, harmless doctrine, he was denounced; and submitted to write an apology, which was published in the 12th volume of the Amantitatis Literarum. Franc. 1730. Gen. Biog.

Curio, the chief and priest of a curia.
Romulus, upon dividing the people into curia, gave each division a chief, who was to be chief of that curia, under the titles of curio, and flamen curialis.

His function was to provide and officiate at the sacrifices of the curia; which were called curiones; the curia furnishing him with a sum of money on that consideration: which pension or appointment was called curionium.

Each division had the election of its curio; but all these particular curiones were under the direction of a superior, or general, called curio maximus; who was the head of the body, and elected by all the curiones, assembled in the comita curialis.

All these institutions were introduced by Romulus, and confirmed by Numa, as Halicarnassus informs us. Godwin will have two curiones in each curia.

Curiosolites, in Ancient Geography, an ancient people of Gaul, as called by Caesar, and placed by M. D'Anville N.W. of the Redones.


Curiosus, an officer of the Roman empire, during the middle age, appointed to take care that no frauds and irregularities were committed; particularly no abuses in what related to the polls, the roads, &c. and to give intelligence to the court of what passed in the provinces. This made the curie dei people of importance; and put them in a condition of doing more harm than they prevented: on which account, Honorius cahiered them, at least in some parts of the empire, anno 415.

The curio came pretty near to what we call controllers: they had their name from cura, care; "quod curis agenda & evelionibus curiis publicis infpicientes operam darent."
The Curtische-Haf is full of dangerous sand-banks, and exposed to frequent and violent storms.

CURISCHE-NEHRUNG, that tongue or narrow ridge of land which separates the Curtische-Haf from the Baltic Sea.

CURIUM, in Ancient Geography, a town and also a mountain of Greece in Eolia. — Alto, a town which, according to Strabo, was near the promontory of Curtius, in the Isle of Cyprus, lying to the N.E.; but, according to Ptolemy, it was separated from the promontory by the river Lycus. Curtius was also the name of one of the small kingdoms into which the Isle of Cyprus was divided. Strabo mentions an altar of Apollo, sittand in this canton, so that any one who approached it risked being precipitated into the sea. The town is now called Pileopia; and the promontory Cape Cavati. See CURIAS.

CURIOUS, DENTATUS MANLIUS, in Biography, an ancient Roman, who raised himself from almost the lowest rank, to the highest and most important offices in the state. He attained the rank of conful, B. C. 295, and shortly put an end to the long war that had been carried on between his countrymein and the Samnites; his courage and prudence fitted him for the difficult times which he found himself in. In some instances, the enemies of his country who were unable to conquer, or to cope with him, attempted, what has often proved a safer and a shorter enterprise, namely, to bribe him. The persons once employed to assail his virtue, found him cooking his humble meal with his own hands; he heard their offer, and manfully replied, "the man that could dine as he did had no occasion for gold;—that he accounted it more honourable to command the possefions of wealth, than to be rich himself; and that they might allure their countrymen, they would find it as difficult to corrupt as to conquer him." Inflexible as the integrity of this patriot was, still he had his enemies: jealous of his superior talents, and envious of his well-earned fame, they accused him of converting, to his own purposes, part of the spoil taken from the enemy. He was examined on the subject, and confessed the fact;—he had retained only a wooden oil-well, for the purpose of making libations to the gods. On many occasions after this, he conferred on his country the most signal benefits; and on the defeat of Pyrrhus he had a magnificent triumph, exhibiting not only a vast quantity of rich spoils, but several captured elephants, animals that had never before been seen in Rome. The senate, on this occasion, offered him fifty acres of land, which the virtuous and self-denying conful refused, saying, that seven acres, the common share of every citizen, was enough for any man to live on. Of the latter days of this citizen we have no account: it is, however, recorded, to his honour, that he expended a large part of what he gained from the enemy in bringing the water of the river Anio to Rome. Plutarch. Univert. Hill.

CURL, in Agriculture, is a vegetable disease which frequently attacks potato crops, producing a sort of crisped-up or curled appearance in the leaves. It is an affection which has been ascribed to various causes, by writers on vegetation; but the real nature of which does not seem to be well understood. Some situations are more exposed to the attacks of it than others; and in some it is laid not to occur at all. This is the case, according to Mr. Headrick, in the latti, island of Arran in Scotland. It is likewise found by experience to be more common in such lands as have been long in the state of tillage, than in those which have been newly broken up, or brought into the state of cultivation; and in grounds of the fenny and moisty kind, less frequently than in those of the more dry descriptions.

It has been stated in an interesting paper, inserted in the second volume of "Communications to the Board of Agriculture," as having generally been supposed to be a specific disease, produced solely by contagion, not being conceived capable of arising without it; and that this contagion of necessity produces the disease in all crops with which it is permitted to come in contact. But this opinion is fuggled, as appearing not to be well founded; as the disease does not necessarily propagate itself, which is sufficiently evident, it is imagined, both from observation and the result of experiment: for it is often found in fields of this sort of crops, that the moil healthy plants are surrounded with those which are in the curled state; and that they not only continue in a state of health and vigour, while the crops remain on the land, but may even be afterwards mixed with them for a considerable length of time, without suffering any contamination. It is likewise ascertained, that healthy potatoes are afforded not only from such as have been thus mixed with those which were cur'd, but that it has been shown by experiment, that they may be obtained from cur'd potatoes themselves, as will be seen below. It is also known to farmers, that the curl often occurs where not anything of contagion was communicated, nothing being more common than abundance of cur'd plants from roots infected with the greatest circumspection; from lands as well as districts, in which the disease has never been perceived. A farmer, whose potatoes had for two or three years been greatly injured by this disease, conceiving that it happened from infected seed, procured a large supply for himself, as well as some of his friends, from a district on the Tweed, where the disease at that time had never been seen; but it did happen, that, while some of the crops from these potatoes were entirely free from the curl, others, and particularly those planted by the farmer himself, were more injured by it than they had ever been before; which should not have been the case, if the common opinion were well founded, that the disease arises from an affection in the original set or root. Other causes must of course be sought for; and it is suggested, that those who take notice will find that whatever renders a crop poor and weakly is the most apt to produce the disease, and that it proceeds in a great measure, if not entirely, from this cause: and it is added, that the weakly state which affords it may be caused by a variety of circumstances, among which the following are the most frequent.

"I. In this district, the most frequent cause of it, perhaps, is the planting potatoes on ground altogether unfit for them. Potatoes require a light pervious or open mould, their germs not being of a nature that can penetrate a stiff soil. This, for a great length of time after potatoes first appeared in this country, met with such marked attention, that they were never planted but in the lightest spots upon the farm, and with such care that the plough was never employed for them: they were planted entirely with the spade, by which the soil was completely broken; hence they had vigorous plants, and rarely any appearance of curl. But on farmers willing to extend the culture of potatoes, and being thereby induced to plant them on every variety of soil, as they now frequently do, the crops became weak, and the curl frequent. In the culture of every other crop, farmers take care to appropriate particular soils to each; for they know that they commonly fail, if this necessary piece of attention be overlooked. Those who have light land only do not
not few beans; while, on stiff clay soils, the culture of turnips is never attempted. In like manner, potatoes require a peculiarity of soil; and in so far as this is deviated from, the crop is commonly weak, and liable to curl. In a field of several acres, which every fourth year was planted with potatoes, about half an acre, or thereabouts,” the writer says, “was stiff clay, while the rest was a free dark coloured loam, rather tending to sand than clay. On all this part of the field the crop was uniformly strong, and free of curl; while on the half acre of clay, although manured with the same quantity of dung, planted with the same feed, and in every circumstance managed in the same manner, the plants were all weak, and a great proportion of the whole curled.

11. But imperfect culture is perhaps the most frequent cause of curl. This will be found to hold with such uniformity, that a crop of potatoes is commonly strong, abundant, and free of curl, in proportion to the previous culture given to the soil, and care taken to keep it clean after they are planted. This indeed is so remarkably the case, that, excepting in very kindly soils, the additional produce from trenching and planting with the spade is commonly more than sufficient to repay all the trouble and expense between this mode of culture and that of planting with the plough. On a large scale, indeed, the spade cannot be employed, and plumpious crops are likely to be obtained, and plentiful crops are no doubt often obtained with the plough; but many are not sufficiently aware of the full necessity of ploughing and cleaning their grounds well before the crop is planted: for if the mould is not previously well broken, it cannot be done afterwards, so that the plants are weak from their first appearance, and a great proportion of the whole curled. The effect of complete previous tillage, in the culture of potatoes, is indeed so remarkable, that there is reason to believe, that the amount of our potato crop, in a great proportion of cases, would be much more than double of what it commonly is, if the ground on which they are planted was previously put in better order. Of this many proofs might be given, but the writer only mentions two. A farmer, who every year planted several acres of potatoes with the plough, allowed his servants to plant nearly two acres for their own use; but these, being commonly on spots of different access, could not easily be managed with the plough, and, being always in bad order, they were planted with the spade, in the form of what is usually termed lazy beds. The effect of this uniformity was, that although the crops, even of those planted with the plough, were always good, being sometimes at the rate of three hundred Wincheller bushels on the Scotch acre, and weighing from eight to ten tons; the others, in different instances, weighed more than the double of this, and for the most part were entirely free of curl. And the writer soon after getting possession of a farm, being late in overtaking his potato crop, a considerable part of a field, which happened to be both full of root weeds and not sufficiently broken, was in that situation planted by his servants, before he knew of it: but half an acre, or thereabouts, being still worse than the rest, it was kept either with a view to give it a complete fallow, or to sow it with tares. The feation, however, being dry, which favoured the cleaning of ground, this piece was three times ploughed, well harrowed after each ploughing, and the root weeds gathered and carried off. Being now in fine order, it received the same quantity of dung which was given to the rest; it was planted with potatoes taken from the same quantity, and in every other circumstance managed in the same manner: but the event was widely different. Although a week later in planting, the crop was sooner above the surface; the plants were stronger from their first appearance, and scarcely a curled stem to be met with: while in every row of the others the curl was frequent. The ground was kept clean with less than a fourth part of the expense and trouble, the produce was more than double, the ensuing crop of wheat was considerably better on this piece, and the ground continued in every respect in better condition till the third crop, when more pains were taken with the rest of the field.

11. The writer has reason from experiment to think, that small roots, or too small a portion of strong roots, being given to each set, has an influence in producing a weak crop, and curled plants. It is perhaps equally necessary, in the culture of potatoes, as in that of wheat, or any other crop, to make a choice of healthy full-grown seed; but this is not always done. Small potatoes are often indeed purposely kept for planting, instead of theie that are full grown, and therefore more capable,” the writer supposes, “of producing a vigorous progeny. In like manner, there is cause to suspect,” he says, “that our frequent attempts of late years to discover new varieties of potatoes, by raising them from feed instead of the root, have had some influence in rendering the curl more frequent; plants raised from the feed being commonly, for the first two or three years, very weak and feeble. Sixty-four sets were planted; sixteen of which were full-grown plants; sixteen from small roots, in which no curl appeared when in the field; sixteen from roots raised from the seeds two years before; and sixteen from roots of plants strongly curled. They were all planted in the same manner, in a light loam, and in furrows parallel to each other, with a moderate quantity of dung to each, and covered to the depth of three inches. Of those taken from large potatoes, none were curled, and the plants were all strong and healthy. Some good plants appeared in each of the other rows, but nearly a half of the whole was curled. The proportion of curled plants was greatest in those lately raised from the feed; in the other two rows, they were nearly the same. The rows planted with curled potatoes had seven curled plants, and the other only five; but in this last row, the other three were too weak from the first, that, although not obviously curled, they soon began to shrivel, and, in the course of two or three weeks, disappeared entirely.

11. It has,” the writer says, “been mentioned by a noted planter of potatoes, that sets taken from roots that have sprouted early, and from which the germs have been rubbed, as is commonly done, with a view to the preservation of the sets, never fail to produce curl. The plants which succeed to the second production of germs are always very weak, and with such certainty produce curl, that he is induced to consider this as the only cause of it; but this attentive observer will find, that whatever tends to render a crop, or even particular plants in the crop, weak and delicate, will in like manner seldom fail to produce curl.

1. Too much as well as too little dung appears,” the writer says, “to have influence in producing curl: the first may probably act by corrupting the germ of the young plant; the latter, by not being sufficient to produce vigorous plants. This effect, resulting from an unequal application of dung, may perhaps be considered as the most frequent cause of that partial appearance of the curl, that we often meet with in fields managed in apparently the same manner: for dung is often spread in such a careless flabby manner, that, while some of the plants have none, others have it in too great a proportion, being sometimes covered with it to the depth of several inches.
VI. Too deep as well as too shallow planting," he thinks, "are both apt to produce the curl; but the first of these errors is perhaps the most frequent. The sets should never be placed deeper at first than three inches, however useful it may afterwards prove to lay the earth up to the stems; but instead of this, by the usual method of planting in drills, or ribs, as they are termed, and throwing two deep furrows over the plants, they are frequently covered to the depth of nine or ten inches: by which, from a total exclusion of air, and perhaps from other causes, the crop is always late in piercing the surface, and many of the plants are weak and curled. These ridges are indeed commonly harrowed down at last, but often not till it is too late. And where the plants are placed too near the surface, if the ground itself is dry, they live in weak feble flœms; and many are curled from want of moisture alone. With a view to ascertain the best depth for sets of potatoes, twelve were planted at eighteen inches deep, the same number at the depth of six inches, fourteen, twelve, ten, eight, seven, fix, five, four, three, and two inches; and twelve were so lightly covered, that they were not perhaps at the depth of one inch. The sets were all from large roots of the same crop, and all as nearly as possible cut of the same size. They were all planted at the same time, in the first week of April, in a light dry soil; and they all got the same quantity of cœm; and in every other circumstance were managed in the same manner. The plants at the depth of one and two inches appeared first; but they were weak, and some of them curled. Thœse at three, four, and five inches were all strong, healthy, and entirely free of curl. At fix and seven inches, they were also healthy and free of curl; but they were three weeks later in getting above the ground than those that were thinly covered, and the plants neither so strong, nor the roots so large. Those planted at the depth of eight inches were still later in piercing the surface; they were all weak, and nine out of the twelve were curled. Only four ever appeared of those planted ten inches deep; and they were so weak, that they very soon withered and died. Of those planted at the depth of twelve, fourteen, sixteen, and eighteen inches, none ever appeared; and on digging them up at the end of two months, those at sixteen and eighteen inches deep were found just in the flœm in which they were planted, without any appearance of vegetation on any part of them; while some of those at the depth of twelve and fourteen inches had put forth some feeble germs, none of them exceeding the length of an inch. Those planted at the depth of three and four inches were evidently the strongest plants during the winter season, and their roots largest. Those at five inches deep were nearly equally good; but they were ten days later in appearing above the surface, and the fœms never became so strong, nor the roots so large, as the others not so deeply covered. The writer is therefore convinced, from the result of this, as well as other experiments on the same subject, that about three inches is the best depth at which potatoes can be planted; that the crop will be more or less early, abundant, and, in general, more or less injured with curl, according as the roots are placed at a greater or less depth than this. The refult even of the same experiment, upon this point, may indeed be different in different sorts and feacons; but he has much reason to think that in general it will be nearly the fame.

VII. Whatever injures the new planted fœms, or the germs afterwards, may produce curl: such as the fœms being trampled upon and broken by the horses' feet, in the time of planting; particular fœms being partially covered with

CURL.

VIII. Some years ago, when on a journey, the writer observed a field with a greater proportion of curled potatoes than he had ever before seen, by which he was induced to inquire into the culture of the crop. The ground he found was stiff, and not having been sufficiently broken before the crop was planted, the farmer had passed a roller over it, about a fortnight after planting: the effect of which was, that many of the plants did not appear at all, and a very uncommon proportion of those that came forward were curled. This might in part be owing to the flœm and nature of the foil; but, in a great measure, it seemed to depend upon the solidity given to it by the roller: for in the contiguous field, where the soil was exactly similar, the plants were more vigorous, and the curl not so frequent.

IX. The flœm of the weather, while the crop is young, has an obvious effect in rendering the curl more or less frequent. It does not appear that rain, in whatever quantity it may fall, has any effect, if it be not allowed to lodge, and if the soil is such as potatoes ought to be planted in, that is, a light pervious loam, with little or no tendency to clay. But we frequently find that a long continuance of dry weather, when the shoots first come forth, particularly when accompanied with severe cold winds, is very apt to produce curl. In the early flœm of the crop, too, frost seldom fails to produce it, particularly hoar-frost. This should lead farmers, the writer thinks, to fix on that reason for planting, in which they find from experience that their district of country is least liable to be injured by those causes, and chiefly by cold winds, frost, and a long continuance of dry weather. So far as the writer has observed, the first, second, or third weeks of April answer bel for the south of Scotland, and north of England. Potatoes planted at this period do not appear till the middle or end of May; after which, if it be not in low fœms, contiguous to rivers or marshy grounds, in which hoar-frosts are frequent, they seldom suffer from frost; at the same time that dry weather does not hurt them so much as it commonly does, when they do not appear till the middle of June, when, the heat and evaporation being more considerable, any scarcity of rain proves more particularly hurtful to all such plants as require a full supply of moisture, and which certainty is the case with potatoes, while the plants are young, and do not cover the ground. Although good potatoes cannot be raised on soils naturally wet, every natural quality of soil, with more certainty to prevent curl, and produce vigorous perfect roots, than frequent showers in the early flœm of the crop. As a proof of the influence of winds on crops of potatoes, and in the production of curl, may be mentioned what the writer of this paper has several times observed, that, in the district of country in which he resides, where easterly winds commonly prevail during the months of April, May, and June, all such fields as are sheltered from this wind by high walls and hedges do not so readily produce curled potatoes as others commonly do. In two instances, in his own fields, it has happened, that the plants on these ridges immediately well of a stone-wall have been stong, and entirely free of curl, while the rest of the crop was poor, with several curled plants in every ridge, although the feed and culture were the same over the whole. The general refult of all these observations, the writer says, is, therefore, that the curl is not a disease, but only an accidental debility of those plants in which it occurs. We are not," he thinks, "therefore,
It has, however, lately been contended by others, that this affection of the leaves of the potato plant may proceed from the attacks of insects on the nutritious part of the root under ground, soon after it has been put in. This has been exhibited as a cause, from the circumstance of having found some of the insects which came from a potato root very weak, and their leaves affected with the curl, while others from the same root were strong, vigorous, and free from the disease; and on the root being examined, it being discovered that the part from which the curlel leaves proceeded was wholly excavated, and the substance consumed by insects, while that portion from which the healthy leaves came was perfectly free from their depredations. And in some cases it is imagined that the disease may arise from the leaves only, being attacked by numerous minute animalcula, without the substance of the root being hurt. The former is, however, supposed to be much the more general cause. The substance of the roots is found to be destroyed by insects of the snail, centipede, and beetle kinds.

And it has ill more lately been supposed, by Mr. Knight, to be occasioned by moulding the plant; and that the method of preventing it is by permitting the potatoes to remain in a moderate state of heat, during the winter; and that the young plants which appear in the spring should be taken off, when two or three inches in length, from the tuber, and planted out as sets, the plants from which will be perfectly free from the disease. From whatever cause this disease of the potato plant may, however, have its origin, there cannot be any doubt but that great benefit in preventing it may be derived, from having a more attention to the preparation of the land on which it is to be planted, to the proper season of planting, and to having the culture of the crop afterwards well executed, as upon these much in all situations is founded to depend. See Potatoe.

Curlew, in Ornithology, the English name of the arqueta or numenius, or Scolopax arqueta; see also Scolopax phaeus and Tantalus.

Curlew Mountains, in Geography, are situated in the county of Wicklow, Ireland, between Longths Gara and Arrow, on the borders of the county of Roscommon.

Curlew, flute, in Ornithology, a species of the Charadrius dubius of Linnaeus and Gmelin, the pluvialis major of Buffon, the thick-kneed bird of Latham, and the Norfolk plover of Pennant. It is called dubius from its thick legs, with a remarkable dwelling below the knee. Its specific character is, that it is grey, its two primary wing-quills black, in the middle white; its bill is sharp, and its feet are cinereous. It is a migratory bird, appears in England about the middle of April, and retires in autumn. It is remarkable for a piercing shrill note, which begins in the evening, repeating the cries turlua, turlua, which re-echoes from hill to hill, during the months of September, October, and November, in the provinces of Picardy, Orleans, Beaune, Champagne and Burgundy, in France; and as these resemble the articulated sounds of the curlew, it has hence been called the land-courlew, or coulins de terre. It breeds in rabbit-burrows, and also lays its eggs, which are two, of a copper colour, among the flones on the bare ground. It feeds in the night on worms and caterpillars, and it is said they will catch mice. Its flesh is esteemed very delicate food. In habit, make, and manners, this bird approaches near to the curlew. See Otis.

Curliignano, a town of Naples, in the province of Otranto, 8 miles W. of Otranto.

Curmi, a name given by the ancients to a sort of malt liquor or ale. It was made of barley, and was drank by the people of many nations instead of wine, according to Dioscorides's account. He accuses it of causing pains in the head, generating bad juices, and disordering the nervous system. He also says, that in the western part of Iberia, and in Britain, such a sort of liquor was in his time prepared from wheat instead of barley.

Curmillaca, in Ancient Geography, a place of Belgium, situated, according to the Itinerary of Antonine, between Samacorbia and Casaromagus; corresponding to the present Cornee D'Anville.

Curnock, a measure of corn, containing four bushels or half a quarter. Fleta, 1. h. c. 12.

Curnonion, in Ancient Geography, a town of Spain, placed by Ptolemy in the Tartagonian territory, in the countrv of the Valfoni.

Curabolis or Curabis, now Curba, a town of Africa in Zeugitania, 7 leagues from Clyba, or ancient Clypea or Chypre. This is the Curaba of Ptolemy, who places it on the sea-coast near the promontory of Mercur, between the towns of Clyba and Napos, over against Sicily. It was formerly episcopal, and a considerable place; but at present the ruins of a large aqueduct, with the cisterns that received the water, are the only antiquities which it affords.

Curopalata, or Curapalati, in Antiquity, an officer of the palace of Constantine, to whom the care and ceremonies of the palace were entrusted. This officer occupied an illustrious rank in the age of Julianus, but was supplanted by the "Protorchile," whose primitive functions were limited to the custody of the wardrobe, from whence his jurisdiction was extended over the numerous menials of pomp and luxury; and he presided with his silver wand at the public and private audience.

Curopolis, a town of Asia Minor in Caria.

Curradi, Cav. Francesco, in Biography, a Florentine painter, who was born in the year 1570, and studied under Batilia Naldini. The churches and palaces of Florence possess many of his works, which, as he lived to the great age of 91, differ much from each other in point of style. One of his best altar-pictures is that of S. Saverio in the church of S. Giovanni. His works upon a smaller scale are much admired. Of this kind the gallery of Florence exhibits portraits of Mary Magdalen, and the Martyrdom of St. Cecilia, executed in his best style. Luzzii Stor. Pat.

Curagh, the, in Geography, a celebrated common in the county of Kildare, Ireland, where there is a remarkable fine race course, and which is also used occasionally for encampments. It consists of above three thousand acres of a soft and verdant turf composed of one uninterrupted lawn, varied only by the pleasing inclosures of a few gentle hills. It was formerly covered with wood, and was sacred to religious purposes. It is near the town of Kildare, and affords pasture to an immense number of sheep. Beaumont, Robertson.

Curraghroe Mountains are situated in an angle of the county of Tyros, Ireland, adjoining Donegal.
CURRAN, a town of Hindooslan, in the country of Allahabad; 30 miles N.W. of Allahabad.

*Curra*-Lough, a lake of the county of Kerry, Ireland, in the wild barony of Inveragh, the river Issa flowing from which falls into Ballinaskellig bay. It is of an oval form, 5 miles in length and about half as broad, and abounds with white trouts and salmon. There are some small islands, on one of which are the ruins of a church and other buildings. Smith's Kerry, 1.

*Curra*-lant, in Botany, See Ribes.

*Curra*-lant-Tree, in Gardening, is a small well known fruit tree or shrub, of which there are different species and varieties. See Ribes.

This useful fruit shrub is said to have been brought from the isle of Zant, and planted in this country about the year 1533; and different sorts have since been introduced from Holland. In the different sorts of these kinds of fruit bushes, there are different colours in the fruits which they afford; thus we have red, white, and black currants, as well as various shades of the red, from which circumstance, when the two first sorts are used at the table in mixture well arranged, they produce a very pleasing effect. From the juice of the red kind a jelly is prepared by boiling with lump sugar, which is much employed in sauces and other culinary purposes. And from the black kind a rub is frequently made, which is in high estimation by some as a medicinal remedy in cases of sore throat, and from the great use of the fruit in quintess, the produce has sometimes been denominated equisancy berries.

The produce of the red and white currant, besides being much esteemed as a table fruit, and for kitchen uses, is likewise valuable in febrile complaints from its grateful cooling effect on the stomack, and quenching thirst. It has also considerable refrigent property; and the black fruit is highly alligent; from which circumstance, and its strong disagreeable flavour, it is more rarely admitted to the table.

All the different kinds of these trees are propagated with much facility by planting cuttings made from the strong straight shoots, as well as by layers from the side branches; which, when they have become well rooted, should be removed in the autumn, or early spring months, into nursery rows, where they should be properly managed till they have attained a proper growth for being placed out where they are to remain for fruiting. In doing this they may either be put out as standards in rows, at four or five feet distance from each other, and fix, eight, or ten feet apart in the rows, or be let out against walls or palings, to which they may be nailed, or trained as cleftars, in which latter methods they occupy less room, and afford finer fruit. Being trained horizontally they will require to have yearly the same fringes as in the standard method, in these modes of planting them; the best season of doing which is in the early autumn. And they succeed the belt in foil of a rich sandy quality which has been well trenched over to the depth of two feet, and well rotted dung put in, and where the situation is open.

These sorts of fruit bushes stand in need of a regular annual pruning, after they have arrived at the state of bearing fruit. They produce their fruit on the preceding year's wood as well as on thins or spurs. Therefore all the last year's lateral shoots should be cut off so as to leave only an eye or two on each, being careful not to rub off or injure the spurs; and the young leading shoot of each bearing branch should be shortened generally to about one-third of its length, but more or less according to the strength of the bearing branches in general. From the general luxuriant growth of the shoots of the currant, they mostly require considerable shortening. When the bearing branches become weak and unfruitful, they should be cut out, and strong young shoots be let come from the item or roots to supply their places.

Thus, in the standars, by permitting the bushes to extend in height, only in a gradual manner, and keeping the bearing branches sufficiently thin, they produce better fruit, and in greater abundance; besides, the bearing branches become strong, and are not liable to be forced down to the ground by its weight. This way of pruning has also the advantage of enabling the bearing branches to throw out spurs on every part of them, so that fruit is afforded on every part of the bushes from the item near the surface of the ground to the very extremities of the shoots, fearlessly any portion being naked of a supply. See Ribes.

This is a sort of fruit which, by proper management in respect to situation, may be preferred much longer upon the plants than most others. In this view some should be planted against pales or walls which have a southern aspect, by which the fruit may become ripe more early, as in June; and others against northern fences of the same kinds, which, by being well protected from the early autumnal frosts, and well secured from birds by being covered with mats, may have their fruit continued hanging upon them until the end of October or longer; which is an advantage in respect to its culinary as well as other uses.

*Curra*-lants, in Commerce, a kind of little raisins, or dried grapes of different colours, black, white, or red; brought from several places of the Archipelago, and among others, from the isle of Corinth; whence their name, currants, q. d. Corinths.

They must be chosen new, small, and in large masses; and care be taken, that the little Spanish currants be not foiled in their room. When made up in bales, they may keep two or three years, without flitting, or giving them air. Their use is in feaming several viands, and in some medicinal compositions; where they serve in lieu of raisins. Sir George Wheeler's account of these fruits, and the manner of preparing them, is very curious. The isle of Zant, he observes, is the chief place whence currants are brought; the Morea, or the islems of Corinth, which was ancintly the principal plantation, and whence the Latinis denominated them, now Corinthisca, now produces no more, as having been much neglected; the jealousy of the Turks not allowing large vessels to enter the gulf to take them off their hands.

They do not grow on bushes, like our gooseberries, though that be the common opinion, but on vines, like other grapes; except that the leaves are somewhat thicker, and the grapes somewhat smaller; they have no stone, and, in this country, are all red, or rather black.

They gather them in August, dippose them in couches on the ground till they be dry, clean them, and lay them up in magazines, which the natives call Geraglos; pouring them in at a hole, till the magazine be full. They cling fast together by their own weight, that they are forced to be dug out with iron instruments.

To barrel them for sending abroad they have people who gnaw their feet and legs, and tread them elefe, that they may keep the better. They are sold for about twelve crowns the thousand weight, and pay as much Custom to the state of Venice.

Zant produces enough yearly to load five or six vessels; Cephalonia three or four; and the other islands one. The English have a factory at Zant; the Dutch two or three merchants, and the French one: the English consuming more than two times the quantity that both France and Holland
land do together. Those of Zant know but little of the use we make of them: being perfumed they only favor in dressing of cloth; and being curiously ignorant of the luxury of Christmas pies, and English puddings.

CURRENT, COURANT or CURRENT money, good money, or that which passes in commerce from one to another. See COURANT.

CURRENT accompanies. See Book, Coin, and Price. CURRENT, Currento, also denotes a sort of running French dance; sometimes, a musical air in triple time. See COURANT.

CURRE, an English name for the fifth called by authors Tuncus, and by us more frequently named the red gurnard. See Trigla Tuncus.

CURRENCY, in Commerce, denotes the coin or paper used in any country as a circulating medium for the purposes of commercial intercourse. See Circulation and Paper-Money.

CURRENT, Substantive, (from the Latin current, running) denotes the progressive movement of any thing; but it is chiefly applied to the progressive movement of fluids, especially of air, of electricity, and of water.

Currents of Air.—The various movements of the air have obtained a variety of specific names under the generic appellation of winds, and those names are principally derived from the velocity, direction, and duration of the movements. Hence we have the name breezes, gales, trade winds, monsoons, &c. A peculiar movement of the air is likewise the principal propagator of sound; though not the only one; for sound is also propagated through solids. But the difference between wind and sound is, that the former confides in a progressive motion of the air from one place to another; whereas sound is propagated and conveyed from the former body to the ear, by means of a vibratory motion of the air. The particles of which, in that case, move a very little way backwards or forwards, from their situations, and at the end of every other vibration, are to be found precisely at their original places. See the article SOUND.

The winds generally owe their origin to the rarefaction or condensation of the atmospheric fluid; and, in the strict sense of the word, they actually are currents of air; yet the last denomination has been peculiarly applied to a constant and general movement from east to west, which the air of our atmosphere has been observed to have; but the nature of this current, as well as the probability of other aerial currents, being intimately connected with the common winds, the whole will be examined under the article WIND.

Currents in Electricity. The extensive and wonderful phenomena of electricity exhibit two powers diametrically opposite to each other; and it seems, that if it were not for the mutual opposition of these two powers, hardly any electrical effect would take place. By friction and other means several bodies are electrified, or have an electric power excited in them, which power is conveyed from the excited body to another, through certain substanaces, which are therefore called conductors; but it is not conducted by other substances, which, therefore, are called non-conductors of electricity. When glass is thus excited by friction with the human hand, and a pointed metallic wire is presented to it in a dark room, a small luminous spark, nearly globular, will appear on that point. When a lick of fire, wax, or of rosin is excited by the like means, and the pointed wire is presented to it, a pretty long luminous brush, nearly of a conical form, will be seen with its apex touching the point of the wire. These appearances are the distinctive characteristics of the two electric powers, one of which has thereby been called the vitreous, and the other the resinous electricity. Another very remarkable distinction is, that if two or more bodies are posseffed of the same kind of electricity, viz. either of the vitreous or of the resinous, and are freely suspended by means of flexible nonconductors within a certain distance of each other, they will manifest a considerable degree of repulsion; but if one or more of the bodies be electrified with the vitreous, and an equal number of similar bodies be equally electrified with the resinous electricity, and all these bodies thus differently electrified be brought within a certain distance of each other, a powerful attraction will be observed between the same, which brings them into contact, and as soon as they touch, every appearance of electricity will vanish. It is farther to be observed, that these two opposite electrical powers always appear together, or the one cannot exist without the other; for instance, if a body be electrified with the vitreous electricity, then the other bodies, or the air which is contiguous to it, will of course acquire the resinous power, and vice versa. If one of these powers be communicated to one side of a plate of glass, the other side will naturally acquire the other power. Upon an attentive consideration of these phenomena, and of others of a similar nature, two principal theories have been formed, besides several others, which, being evidently defective or absurd, are at present entirely disregarded. One of these theories supposes that there are two distinct electric fluids; viz. the vitreous and the resinous. Each of these fluids is attractive of the other, but itself elastic, that is, its own particles repel each other, hence bodies posseVed of different electricies attract each other. The other theory, which goes under the name of the Franklinian theory, supposes that there is only one electric fluid whose particles repel each other, but they attract every other kind of matter; in consequence of which this fluid is dispersed throughout the universe, and every body possesses a certain quantity of it. According to this hypothesis, when a body is excited, either of the other powers are called the positive and the negative electricities; the positive answering to the vitreous, and the negative to the resinous powers. Now both these theories have been so well adapted to the phenomena as that either of them is sufficient to account for the phenomena of electricity, excepting, however, those of one kind; namely, of those experiments which manifest an evident current from the positive or vitreous, to the negative or resinous power; for these results can only be explained upon the Franklinian hypothesis of a single electric fluid. Therefore, in the present article it is incumbent upon us to point out the nature of electrical currents, briefly describing the principal of those experiments which shew the direction of these currents in a clear and decided manner; and it is for the purpose of elucidating the nature or the dependence of these currents, that the above short statement of the leading phenomena of electricity has been premised.

Two forms of electrical currents must be remarked. One confits of those which move in the same direction, whether by the vitreous or by the resinous electricity. The currents of the other sort are those which always proceed from the vitreous or positive, and run towards the resinous or negative power.

If a pointed metallic body proceeds from an electrified prime conductor of an electrical machine, and the face of the hand be presented to it at the distance of a few inches, a flight but perceptible wind will be found to proceed from the
point; and this is the case whether the prime conductor be electrified positively or negatively. The cause of this result is, that bodies possest of the same kind of electricity, repel each other; for as soon as each particle of air, contiguous to the pointed body, has received some electricity from the point, it is immediately repelled by it, and other particles succeed, which are electrified in their turn, and are immediately repelled; hence a continual current or wind proceeds from the point. This effect may be rendered still more evident by presenting the flame of a candle to the point, for this will be always blown from it. The same effect takes place when the electrical fly (viz., a little apparatus of metallic wires, see Electrical Fly) is used; viz., the fly will always turn the same way, whether it be electrified with the vitreous or with the refrinous electricity; for the wind which proceeds from each point of the fly, produces a counterpressure which impels the fly the contrary way.

If the wire at the end of the prime conductor be furnished with a brass ball of about three quarters of an inch in diameter, and whilst the machine is in action, the flame of a candle be presented to it, this will be blown from the ball when the prime conductor is electrified with the vitreous or positive electricity, and towards the ball when the prime conductor is electrified with the refrinous or negative power.

The result of this experiment is evidently in favour of the Franklinian theory of a single electric fluid. It may, however, be asked why the flame of the candle is blown towards the wire when the ball is upon it in the latter case, and from it when it terminates in a point? The answer is, that the electricity which proceeds from the point, being incomparably more copious than that which proceeds from the ball, electrifies the air contiguous to it, and produces a current of it which counteracts the direction in which the mere influx of electric power would impel the flame. In the performance of this experiment care must be had not to use a ball too large or too small; the action of the machine must, likewise, be regulated in a manner suitable to the size of the ball. But with respect to these particulars, experience alone can instruct the operator.

Place a lighted piece of wax-candle between the knobs at the end of the wires of the universal discharger, (see Universal Discharger) so that the flame may stand midway at the distance of about one inch from each knob. Then connect one of the wires with the outside coating of a charged electrical jar, and touch the other wire with the knob which communicates with the inside-coating of the jar, and thus on making the discharge which must pass from one wire to the other, through the flame of the candle, it will be found that the flame is always driven in the direction of the electric fluid, that is, it will be blown upon the knob of that wire which communicates with the negative side of the jar. For this experiment the jar must contain an exceedingly small charge, viz., just sufficient to pass through the interval in the circuit, which experience will readily determine; otherwise the experiment will not succeed. If it be asked why this experiment does not succeed with a great charge as well as with a very small one? The answer is, that when the jar is highly charged, and is brought near one of the wires of the universal discharger, it creates an atmosphere about the knob of that wire which disturbs the flame of the candle, before the discharge actually takes place. Besides, the electric fluid in a great expansion, being actuated by its great efficicncy, which is proportionate to its condensation, passes through the flame of the candle too swiftly to communicate any distinct motion to it, in the same manner as when a bullet is discharged from a gun against an open door, which makes a hole through the door without shutting it.

Bend a card in the form of a half cylinder, viz., so as to form a semi-circular groove. Lay it upon the circular board of the universal discharger, and place a pith-ball of about half an inch in diameter in the middle of it. Let the two brass knobs on the wires of the universal discharger be disposed so as to land on each side of the pith-ball at the distance of about three quarters of an inch from it. The card must be perfectly dry and rather hot. Now, if you connect one of those wires with the outside of a charged jar, and touch the other wire with the knob of the jar, the charge will be sent from one wire to the other, along the channel in which the pith-ball is situated, and this will be found to be driven from the positive to the negative side. In this experiment, also, the charge of the jar must be very low, the card must be very clean and dry, also the distance of the brass knobs from the pith-balls must be nicely adjusted, otherwise the experiment is apt to fail.

Let a card be laid upon the circular board or tablet of the universal discharger, and place the pointed wires of the same so that one point may touch the upper, and the other may touch the lower surface of the card. Let the interval between these extremities of the two wires be about one inch; then send the charge of a pretty powerful jar through those wires, in the same manner as directed in the preceding experiment, and it will appear from the luminous track, that the electric fluid runs over that face of the card which touches the wire that communicates with the positive side of the jar, and in order to pass to the extremity of the other wire, it breaks a hole through the card just over the extremity of that other wire, which is connected with the negative side of the jar.

The last experiment which we shall mention must be performed with an electrical battery, or at least, with three or four large jars connected together. When the charge of such a battery is sent through a slender wire of any metallic substance, and of a considerable length; viz., of a foot or upwards, the discharge generally melts and disfigures either part of the wire, or the whole of it; but if the charge of the said battery be diminished, so that the discharge be just able to render the wire red-hot, without actually melting it, then it will be found that the redness appears first at one end of the slender wire; viz., that which communicates with the positive side of the battery, and thence proceeds successively to the other end of the wire. This result is an occult demonstration of the theory of a single electric fluid. Indeed the wire is not rendered red-hot at one end before the other, in consequence of the electric fluid passing first through the former, and then through the latter; that difference of time being by far too small to be observed; but because the electric fluid loses part of its impetus or velocity, in going through the wire; so that the extremity of the wire which the electric fluid enters at, suffers the greatest effect of the shock, and, of course, becomes red-hot sooner, in a greater degree than the rest.

Currents, in Hydrography. Two movements of different kinds have been observed, by which the waters of the sea are impelled in some horizontal direction from one spot towards another; namely, tides and currents. The motion of the waves when the wind prevails, seems to urge the water in the direction of the wind; but in truth they do not; they only raise and dash up the water of the same spot alternately. (See Water.) The action of the wind, however, undoubtedly urges the waters in its direction; but that movement is so very slow, as hardly to be perceived, even
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Even in a pretty hard gale; for instance, if a man on shore fixes his eyes on a piece of wood floating at the distance of about a mile, he will find that the piece of wood rises and falls alternately, according as the waves do; but its motion from that spot will perhaps not exceed a quarter of a mile in an hour; and such is nearly the motion of the waters which surround the floating piece of wood.

The difference between tides, and currents properly so called, is, that the former follow, with alternate rising and falling, the daily motion of the moon, and, likewise, in some measure of the sun; whereas the currents continue in one direction much longer. As both the tides and the currents are matters of the utmost consequence in navigation, no pains have been spared to examine, and to investigate the causes of all the various phenomena which attend them; such as, their periods, their velocities, their directions, the places in which they prevail, and so forth. The observations of navigators, the experiments and the calculations of philosophers, on this interesting subject, are very numerous; and, though they have not as yet been able to form a general theory sufficient to account for all the phenomena, yet it must be acknowledged, that they have furnished the present generation with much useful information, which is daily deriving additional lights from the affluence of numerous able and industrious observers.

The tides, which are rendered more apparent on the coast, by their flowing and ebbing, depend principally on the attraction of the moon, but in some measure also upon the attraction of the sun; for when those two celestial bodies happen to be in the same direction, the tides are sensibly greater than when the moon alone acts upon the waters of the sea, which is the case when the sun is at some apparent distance from it. "Every day, about the time of the moon's passing over the meridian, or at a certain number of hours later, the sea becomes elevated above its mean height, and at this time it is said to be high water. The elevation subsides by degrees, and in about six hours it is low water, the sea having attained its greatest depression; after this it rises again when the moon passes the meridian below the horizon, so that the ebb and flood occur twice a day, but become daily later and later by about 20 minutes, which is the excess of a lunar day above a solar one; since 24 ½ lunar days are nearly equal to 24½ solar ones. "Thus much concerning the tides has been thought necessary to be inserted in this place, for the purpose of making a proper discrimination between them and the currents; but the full account of the numerous and interesting particulars relative to the former, will be found under the article Tide.

Currents at Sea, are progressive movements of the waters, which carry vessels, or any thing floating upon them, in their directions, and precisely with their own velocity, when no wind prevails; or, if any wind acts upon the vessel, the current will increase or check its rate of going, according as the wind happens to blow with, or contrary to its direction. Hence, in reckoning the ship's run, due allowance must be made for the action of currents.

The currents do not, like the tides, change their directions after the lapse of a few hours; yet some of them run one way during a few days; others continue a few months in one direction, and then alter their course, or vanish altogether, whilst others run continually the same way. The extent of currents, their breadths, their depths, and their velocities, are also various, and often fluctuating. Some, for instance, run along immense tracts, and spread a vast way, whilst others are observed close to some particular coast or strait, and not farther. Some reach very deep, and others are very superficial. The velocities of some currents are remarkably great; but in general when the periodical currents are near the period of their termination, they generally slacken in their pace.

Currents are either general, particular, or variable.

General currents are those which are always directed towards the same point of the compass.

Particular currents shift from one direction to its opposite in the course of about six months.

And variable currents are those which have no fixed period, and are generally affected by the wind; the twenty-ninth part of the velocity of the wind being equal to that of the current.

There are also upper and under currents; that is, the waters at the surface move in a contrary or oblique direction to those at the bottom. And there are currents at the surface, at no great distance from each other, which move in opposite directions.

The principal current of the aequinoctial part of our globe is observed in its broader and more exposed surface. Its general direction is from the east towards the west; viz. contrary to the motion of the earth in its diurnal revolution. This current comes from the Pacific and Indian oceans, round the Cape of Good Hope, along the coast of Africa. thence it passes over to America, where it divides itself into two branches, one of which is reflected southward, toward the coasts of the Brazil, and the other northward, into the gulf-stream (see Gulf-stream), which proceeds round the Mexican gulf, advances north-southward in the vicinity of Newfoundland, after which it probably returns easterly, and south-easterly, crossing the Atlantic once more. "The atmosphere also seems affected by a general current from east to west, like that of the sea; and there is reason, from astronomical observations, to suppose that a similar circumstance happens in the atmosphere of Jupiter, on account of the actions of his satellites, which must be considerably more powerful than that of the moon."

"These currents," Dr. Th. Young observes, "as well as the general current of the sea, have been attributed, by some alchemists, to the immediate attractions of the sun and moon, and of the satellites of Jupiter, which they have supposed to act in the same manner as the attraction of the sun operates in retarding the lunar motions. But the fact is, that according to Mr. Laplace, the disturbing force of the sun produces this effect on the moon only in proportion as it increases her distance from the earth; consequently, no such retardation can possibly be produced by the force of gravitation in the rotation of the sea; or of the atmosphere, and the whole effect must be attributed to the operation of meteorological causes, producing first the trade winds, and secondly occasioning, by means of the friction of those winds, a similar motion in the sea."

Another remarkable constant current is that which runs from the Atlantic into the Mediterranean, through the straits of Gibraltar; a channel of about seven leagues. The velocity of this current is in some measure influenced by the state of the winds, according as they may either confine the current, or blow against it. However, its ordinary velocity, at the narrowest part, is about two miles an hour; but this velocity slackens as soon as the channel becomes wider, and soon after disappears. It is said that at the sides, and especially on the fourth side of the Straits, there is a current outwards. (Phil. Trans. vol. xxxiii.) This has likewise been observed in the current runs in contrary directions on the opposite coasts. (Phil. Trans. for 1702.) And Mr. Robinson says that the current sometimes runs outwards in the middle of the Straits. It appears, however, from the constant observations of mariners, that if any such outward currents do really
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really exist, the breadth of that which runs into the Mediterranean is incomparably larger than the former. Now the question is, what becomes of that immense quantity of water which this continually runs into the Mediterranean, which sea has no other visible communication with the ocean? A variety of conjectures have been offered in explanation of this remarkable phenomenon; and though some of these conjectures are attended with an appearance of probability, yet we are by no meanspossessed of a clear and satisfactory theory concerning it. We shall briefly state the principal hypotheses respecting this question, together with the reasons by which they seem to be supported or invalidated. But previously to this, it will be necessary to mention certain facts of importance in the present case. The Straits of Gibraltar are unfathomable; hence the depth of the water must at least exceed one mile. The surface of the Mediterranean seems to have remained at the same level during at least a century or two; nor are the low lands on the coast of Africa, or elsewhere, ever overflown. But between the present time and a remote antiquity, viz. a period of about 2000 years, the rising of the water a few feet has been deduced from the following documents. The floor of the cathedral of Ravenna is at present several feet lower with respect to the sea, than it is supposed to have been formerly. Some steps have been found in the rock of the island of Malta, apparently intended for ascending it, which at present remain under water. In the bay of Naples, and on that part of the coast which is nearest to the famous groto of Posilipo, vestiges of several ancient houses are at present visible under water, which formerly must undoubtedly have been out of it. The like thing is also to be observed on several other parts of the coast. Yet a considerable degree of uncertainty is thrown upon the evidence of these documents, by other observations. Thus in the bay of Puzzolani, near the city of Naples, the ancient piers of malleable stone which have refilled the efforts of about 2000 years (whether they belonged to the bridge of Caligula, as tradition says, or to a mole which was intended for the protection of the Roman galleys) seem at present to remain at such an height above the surface of the water, as might have answered either of those purposes. Since the rising of the level of the water in the Mediterranean has not been perceived within the century or two, and considering all the above-mentioned facts, it will be difficult to determine whether the level of the sea has risen a few feet in the course of eighteen or twenty centuries; or the ground has subsided in some parts of the coast in consequence of earthquakes, and other causes. It is hardly to be observed, that the specific gravity of the Mediterranean waters is a little greater than that of the Atlantic water, indicating the presence of a little more salt in the former than in the latter, which may be naturally expected, considering that the waters of the Mediterranean are surrounded by a proportionally greater extent of coast than those of the Atlantic.

One of the conjectures concerning the disposition of the water, which is continually brought into the Mediterranean by the current of the Straits, is, that there is an aperture, or passage, at a considerable distance below the surface of the ground, which joins the Mediterranean with the Red Sea; so that the water, which enters the Mediterranean through the Straits, runs out of it through the above-mentioned passage. This conjecture, however, being not established upon any actual facts, is not likely to prove very satisfactory. Another conjecture is, that the influx of water is carried away by evaporation, considering the solar heat to which the Mediterranean is exposed; and to Dr. Halley is inclined to think. It has been calculated, that in one summer's day about 5656 millions of tons of water are, in all probability, evaporated from the surface of the Mediterranean. It has also been calculated, (admitting the great uncertainty to which such calculations are liable,) that all the rivers, or at least the nine principal ones, which discharge their water into the Mediterranean, do not furnish more than 187 millions of tons of water a day. (Phil. Trans. 1712.) The deficiency then is supposed to be supplied by the rain, and by the current from the Atlantic. But, since the vapour of sea-water does not take up any saline particles, it follows that the Mediterranean sea, after so many centuries of evaporation, which leaves the saline particles behind and of influx by the current, which introduces salt and water, would by this time have almost been converted into a solid rock of salt; which is by no means the case. The last hypothesis we shall mention, and which, upon the whole, seems to be the most probable, is, that at the Straits of Gibraltar there are two currents in different directions, one above the other; viz. that a current runs into the Mediterranean at the surface, and to a certain depth, whilst another current runs out of it near the bottom; which, considering that the evaporation continually tends to increase the specific gravity of the Mediterranean waters, may take place in consequence of that circumstance; "for the same reason," Dr. Thomas Young observes, "as the air, when it is denser in a passage than in the adjoining room, blows a candle towards the room at the lower part of the door, and draws it towards the passage at the upper." The probability of the existence of two opposite currents, one above the other, in the Straits, is corroborated, fuft, by this hypothesis anwering to the phenomena better than any other hypothesis; and, secondly, by the observation, that opposite currents, one below the other, have been actually found to exist in other parts of the sea. Thus, in support of the above-mentioned lower current, Dr. Smith, in the 14th volume of the Philosophical Transactions, relates an experiment made in the Baltic Sound, which was communicated to him by an able seaman, who was present at the making of it. Being at that place with one of the king's frigates, they went with their pinace to the midstream, where they were carried away violently by the current. Whilst thus running with the current, they took a b Apple with a large cannon-ball to a certain depth of water, by which means the boat's motion was checked; but by firing the ball sink lower and lower, the motion of the boat was checked more and more, until at last it was driven ahead to the windward, against the upper current, which seemed to reach not lower than about four or five fathoms. He added, that the lower the ball was sunk, the longer the under-current seemed to be. Dr. Smith derives another argument in favour of an under-current at the Straits, from the ebb between the north and south Foreland, where it runs tide and half tide; viz. it is either ebb or flood in that part of the Downs three hours before it is so at sea; a certain sign that, though the tide of flood runs above, the tide of ebb must run below, viz. close to the ground; and at the tide of ebb it will flow close to the ground.

A remarkable current exists in the Atlantic, about the coast of Guinea, which runs from the west towards the eait, in a direction contrary to the general motion of the sea, from Cape Verd towards the curvature or bay of Africa. This current, which is known by the name of "Fernando Poo," is said to be from 40 to 50 leagues wide. It carries with it large quantities of negroes, and is called the "Western Current." Its strength is such that a vessel may, in two days, go from Mina to Rio de Born, distant 150 leagues; and the time
required to return is often about six weeks. From Cape Sparatte to Sille a current sets nearly according to the
trend of the coast; and from thence it inclines towards the

Of the currents, which may be properly called partial
and shifting, a vast number have been observed, and new
ones are met with in different parts of the world, by atten-
tive navigators. They are generally occasioned by the
monsoons and other winds, or by the peculiar configura-
tions of promontories, straits, coasts, gulfs, &c.; for the wa-
ter, which, by the continuance of the wind in a certain quarter,
is driven against bays, gulfs, straits, and the like, must
run off some way or other, and must thus produce a current or
two, which last no longer than the cause continues to
set.

At Java, in the straits of Sanda, when the monsoons
blow from the west, viz. in the month of May, the cur-
rents set to the eastward, contrary to the general motion.
Also, between the island of Celebes and Madura, when
the western monsoons set in, viz. in December, January,
and February, or when the winds blow from the north-west,
or between the north and east, the currents set to the south-
east, or between the south and east.
At Ceylon, from the middle of March to October, the
currents set to the southward, and in the other parts of
the year to the northward; because at this time the southern
monsoons blow, and at the other the northern.

Between Cochinchina and Malacca, when the western
monsoons blow, viz. from April to August, the currents
set eastward, against the general motion; but the rest of
the year set westward: the monsoon conspiring with the
general motion. They run fo strongly in these seas, that un-
expected sailors mistake them for waves that beat upon the
rocks, known by the name of breakers.
So, for some months after the 15th of February, the
currents set from the Maldives towards India on the east,
against the general motion of the sea.
On the shore of China and Cambodia, in the months of
October, November, and December, the currents set to the
north-west, and from January to the south-west, when they
run with such a rapidity of motion about the islands of Par-
cel, that it seems twister than that of an arrow.
At Pulo Condore, upon the coast of Cambodias, though
the monsoons are shifting, yet the currents set strongly to-
wards the east, even when they blow to a contrary point.
Along the coasts of the bay of Bengal, as far as the cape
Romania, at the extreme point of Malacca, the current runs
southward in November and December.
When the monsoons blow from China to Malacca, the
sea runs swiftly from Pulo Cambi to Pulo Condore, on the
coast of Cambodia.
In the bay of Sams Bras, not far from the Cape of
Good Hope, there is a current particularly remarkable,
where the sea runs from east to west to the landward; and
this more vehemently as it becomes opposed by the winds
to a contrary direction. The cause is undoubtedly owing
to some adjacent isle, which is higher than this." Var-
renius.

It is said that a current runs towards the east in St.
George's Channel, in conformance of which some ships
have been driven by it to far from their intended course, as to en-
ter the English, instead of the Briton, Channel. (Phil.
Trans. vol. xxix.) There is reason, however, to suppose,
that this mistake arose from their not accurately knowing the
variation of the magnetic needle in those parts.
A current is said to prevail on the western coast of Scilly,
which is supposed to come out of the Bay of Biscay, to-
wards the N.W. by W., in conformance of the westerly winds
of the Atlantic.
Near Sumatra there are some rapid currents, which run
from south to north, and which, according to Buffon, have
probably formed the gulf which is between Malay and In-
dia. Between the eastern coast of Africa and the island
of Madagascar, especially between Terra de Natal and the
Cape of Good Hope, upon the African coast, there are
very considerable currents. In the Pacific ocean, on the
coast of Peru, and other parts of the American coast, the
currents set from south to north: a direction which appears
sometimes to be occasioned by a wind which constantly blows from
the south. This is also the case with the current upon the coast
of Brazil, from Cape St. Augustine, as far as the Ar-
tilaes.
In the sea bordering on the Maldives islands, and between
them, there are very strong currents, which run constantly
during six months from east to west. They follow the
course of the winds, and are probably produced by them.

See Buffon's Nat. Hist.
Between Jamaica and Cuba the currents run toward the
W. and at Cape de Creux, towards the N.W.; but on the
Caïmans, towards the N. and N.E., to fall in with the
small channels of the Jardines; and by the lie of Pines,
they set to the S.W., till they come to Cape de Corrientes;
and from thence to the W.N.W. and N.W., and by the
coast of Apalache, they return to the E. and E.S.E. and
N.E., at the edge of the Soundings, near Tortugas; and
from thence run towards the E. to fall into the channels
of Bahama, according to their situation.
The strongest currents of the waters are in the gulf of
Florida, where they run to the N., until they come out at
the cape of Canveral; and from thence they set towards
the N.E., losing much of their force and strength near
Bermudas.

By the north side of Cuba the current sets from Cape
Mayu, towards the N.W.; and through the old straits of
Bahama, to the W.N.W., with a small beam; but con-
ing to the point of Hecaco, it runs to the N. and N.E. to
fall in with the other channels; and from the port of Ca-
vanna it runs to the E. and E.N.E., sometimes violently
into the said channels; but from Cavanna, towards the
west part of the coast, the current alters its course, and runs
to the S.W. to fall in with the small channels of St. Ibel or Colorades. With the north and land winds the current
sets into the afore-said gulf, and along the coasts of Hav-
nah and Florida, in the same manner as with the trade-
winds. Upon the coasts of Caracacas, Venezuela, Mara-
cuho, and St. Martha, the currents set with the trade-
winds, towards the W. and W.N.W. With the land
winds the currents are in general strong, especially on the
coast of St. Martha; but during the time of the north wind,
the currents become weak. In the channel between Cape
St. Nicholas, in the island of Hispaniola, and Cape Mayu,
in the island of Cuba, the current sets towards the N.W.
and W.N.W.; and those currents that fall in with the south
coast of the above-mentioned cape run along it, towards the
west, by the coast of Cuba; and those that take their course
by Cape St. Nicholas, on the land side, run towards the
east, and fall in between the coast and the island Tortugas.
From thence they flow a course between the N. and N.W.,
in order to fall into the channels formed by the islands
and shoals to the northward of the islands of Cuba and Hispa-
niola, &c. In the bay of Pitiou, the current runs in
eddies with a slow motion: and along the north and south
coasts of Hispaniola, the current sets with the trade-winds
towards the west; and on the north coast, its direction is
towards...
toward the north-west. On the eastern side of the above-mentioned islands, the currents run in very contrary directions, particularly in the bay of Samana; on the Virgin islands, and Porto Rico, the current sets towards the west with the trade-winds; and along Pufase, runs towards the N.W.; and in the westernmost part of the island of Porto Rico, the currents are changeable, inclining more towards the W.N.W. as they run to the bay of Samana.

Captain Vancouver observes, that from the island of St. Antonio, one of the Cape Verde islands, till crossing the latitude of St. Augustine, (perhaps the cape so called on the coast of Brazil, in lat. 38° 38' S.) were material currents; and from 6° N. latitude to the equator, strong ripples. But they were irregular in direction, and not uniform, as Mr. Nicholl's states in his Indian Directory of 1787. Our current was not northward, as he states, but southward, or south-east. Mr. Vancouver also disapproves his notion of finding longitude by the variation of the compass; for these observations, though made with the greatest care, says he, differ from one to three, or even four degrees from each other.

Other authorities state, that in the long. 26° 16' W., upon the line, a current has been found to set N. by E. half a knot an hour, and to continue nearly so for a month's fall or more to the northward. It afterwards begins to set to the northward of the west. But in the long. of 6° 25' W., scarce a degree N. of the line, a current has been found setting N.E. eight knots in 24 hours, making an error in reckoning from St. Jago of 3° more to the east than by account. After crossing the line, the S.E. trade-wind seems to set the current westward, as a ship will then outstrip her reckoning. Perhaps these currents have been left attended to, because in this track, they commonly balance each other to the Cape of Good Hope.

M. de la Perouse remarked, after leaving Easter island, in April, 1786, that a current set toward the Sandwich islands, at first about 3 leagues in 24 hours, making a degree to S.W. It then changed to set at the same rate, till in 50° N., after that to the westward. Hence the longitude by account was 5° too far east, on arriving at those islands; and hence the Las Mejias, La Mafa, La Diogra, Ciada, &c. of the Spanish charts, probably no other than the Sandwich islands, have from these currents been laid down too far easterly. He found also on the North American coast uncommonly strong currents, about the latitudes of 40° and 47 degrees.

The following notices of currents were also made in the course of captain Vancouver's voyage. He found that in passing through the Atlantic ocean, in going towards the equator a current set 6 miles to E.E. in 24 hours, when he was arrived in lat. 32° 34' N. and long. 12° 37' W. After passing the island of St. Antonio, the currents became extremely variable and uncertain. After passing the southern tropics, he found, on arriving at the parallel of 28° 22' S. lat. and in long. 4° 42' 24'' E., that a current had set the ships 26 miles to the north of their reckoning. When he was on the coast of New Holland, near King George's Sound, in lat. 55° 5' S. and long. 118° 17' E., he concluded that the current set easterly. When he had entered the North Pacific ocean, and had reached the north-west American coast, he observed that a current set northward half a league in an hour, (perhaps a mistake in printing, or transcription, for half a mile,) which set the ship 10 or 12 miles daily to the north of her reckoning. On returning southward, he noted also that a current set westward, when he was in latitude 52° 27' N. and long. 96° 24' W.

Captain Cook observes as follows: “From the time of our leaving that island (Teneriffe) till the 11th August, being then in lat. 15° N. and long. 25° W., the ship was carried 5° 20' of longitude to the westward of her reckoning. At this station the currents took a contrary direction, and set to E.S.E. at the rate of 12 or 14 miles a day, or 24 hours, till we arrived in the latitude of 5° N. and longitude of 20° W., which was our most easterly situation after leaving the Cape Verde islands, till we got to the southward. For in this situation the wind came fotherly, and we tacked, and fetched to the westward, and for two or three days could not find that our reckoning was affected by any current; so that, I judged, we were between the current that generally, if not constantly, set to the easterly and the coast of Guinea, and that which set to the westward of the coast of Brazil.

The westerly current was not confederable till we got to 7° N. and 25° W. From this station to 3° S. and 30° W., the ship, in the space of four days, was carried 115 miles in the direction of S.W. by W. beyond her reckoning: an error by far too great to have any other cause than a strong current running in the same direction. Nor did its strength abate here: but its course was afterwards more westerly, and to the north of west; and off Cape Augustina, north, as I have already mentioned. But this northerly current did not exit at 20 or 30 leagues to the southward of that cape, nor any other, that I could perceive, in the remaining part of the passage.” He farther observes, (vol. ii. p. 470.) that “from the 21st of March, when we were in latitude 27° 22' S. long. 53° 27' E., to the 5th of April, when we got into latitude 35° 11' S. long. 22° 4' E., we were strongly affected by the currents, which set to the S.S.W. and S.W. by W., sometimes at the rate of 60 knots a day.”

It was also observed by sir Erazmus Gower, captain of the Lion, on an embassy to China, which left England in September, 1792, that all vessels from England to Madeira will discover their way is affected by a current from the western ocean into the bay of Biscay, and also into the Mediterranean. He informed, on an estimate from five voyages, that it set S.E. about 11 miles in 50 leagues. From the Madeiras to the Canaries a current was observed to set southward, about 22 miles in the whole run of 66 hours, or 1 mile in 3 hours. But captain Mackintosh of the Indiantown, on an estimate of 20 voyages, states a current from the 35° of latitude to the Canaries, which sets 5° 20' E.S.E. It is strongest opposite the Straits of Gibraltar, and it once appeared to set 40 miles a day. Near the Canaries it was more southerly: but on the coast of Africa, near Cape Baudole, in lat. 26° N., it strikes the shore, and goes one way northward for the Mediterranean, and the other southward for the coast of Guinea. From Rio Janeiro, on the coast of Brazil in South America, a small current sets all the way towards the S.E. till it comes within about 4° of longitude W. from the Cape of Good Hope; but from about 3° W. to 8° E. of the same cape, a counter current sets strongly to the westward. On the coast of Cochinchina a current constantly sets from the easterly, or eastward Indian ocean, towards the land, between the Paracel's islands and the large island of Hai-nan, into the gulf of Tongquin. Whilst the ships, after leaving Taron, ran 100 miles to the N.E. in 24 hours, a current drove them 30 miles to the N. 67° W. The water which returns to those shores is too weak to counteract the constant easterly tide, and is consequently forced northward along the coast into that gulf. Here the tides are, from these causes, very strong and high. Farther to the northward, the reflux from the
the cft coast of the island of Hainan occasions a current to the N.E.; but till farther to the northward, it again sets in from the eastward, nearly in the parallel of the northern channel of Hainan, about 13 miles in 24 hours. But about the lat. of 22° N. in the long. of 114°, or upwards, not far from the coast of China, a current was found to set N. by E., about a mile an hour for 24 hours.

Having thus stated the most known currents, it now remains for us to shew how the existence of a current, and the velocity of it, may be ascertained; for though the time of the setting in and duration of most currents have been examined by various attentive navigators, yet both their durations and their velocities are influenced by a variety of meteorological circumstances. Besides, it frequently happens that a new current is met with in particular seas, of which no mention is made in any book on navigation. Hence it is highly necessary for the mariner to know the best method of observing the existence and the velocity of a current, in which he actually is, or expects to be. If the ship is near the coast, so as to ride at anchor, both the direction and the velocity may be readily ascertained by balling the log, and looking at the compass. But when the sea is too deep, and the ship is under full sail, the method which has been found more efficacious by the mariners is as follows: a common iron pot, capable of containing four or five gallons, is fastened to a small rope, which must be tied to its handles, so that, when suspended, the aperture of the pot may remain upwards and horizontal. The rope, which may be from 70 to 100 fathoms in length, is to be called into the boat, which is hoisted out of the ship at a convenient opportunity; viz. when there is little or no wind to ruffle the surface of the sea. The pot then being thrown overboard into the water, and immediately sinking, the rope is slackened until about 70 or 80 fathoms have run out, after which the rope is fastened to the stern of the boat, which is by it restrained, and rides as it were at anchor. The velocity of the current is then easily tried by means of the log and half-minute glafs, in the same manner as the ship's rate of falling is usually ascertained. It is evident, however, that this method is grounded upon the supposition that the current does not reach so low below the surface of the sea as the place to which the iron pot has been sunk; which, though perhaps mostly true, cannot be always so. Therefore, when the iron pot is not out of the influence of the current, or when it happens to come within an under-current, the result of the above-described method must unavoidably prove fallacious; nor does the present knowledge of navigation afford any other safer method for the purpose.

When the direction and velocity of a current has been ascertained, the application of it to the purposes of navigation is easy and evident: for if the ship fails along the direction of the current, its progress is the sum of the current's velocity and the rate given by the log; if the ship fails directly against the current, then its real progress is the difference of the two above-mentioned particulars, and is directed the same way with the log-gproperties. indeed, it may happen that a vessel, which appears to proceed in full sail towards the north, may actually go backwards towards the south, in consequence of a strong current. If the current runs oft the direction of the ship, then, since the ship is impelled by two forces, viz. by the force of the wind in one direction and by the current in another direction, its real course must be in the diagonal of a parallelogram, of which the sides are the velocity of the current and the velocity with which the wind impels the ship. See Varenus' Geography, Naval Gazetteer, &c.

Current Island, in Geography, a small island in the Pacific ocean, discovered by Captain Carteret, in October, 1757, and so called on account of the strong southerly current which set the ship, in this part of the ocean, from 24 to 50 miles southward every day, before the difference it might make in its longitude. N. lat. 4° 40'. E. long. 134° 3'. Near this island are two other small islands, which Captain Carteret called St. Andrew's islands, in lat. 5° 18'. E. long. 117° 49'.

Current Setting, is the method of resolving those problems in navigation, in which the effect of a current is taken into consideration. That point of the compass to which a current runs, is called its setting, and the rate of its motion per hour is called its drift.

In a calm, it is evident, a ship will be carried in the direction, and with the velocity, of the current. Hence, if a ship fails in the direction of the current, her rate will be augmented by the velocity of the current; but if failing directly against it, the distance made good will be equal to the difference between the rate of the ship as given by the log, and that of the current; and the absolute motion of the ship will be a-head, of her rate exceeds that of the current; but, if lea, the ship will make headway. If the ship's course be oblique to the direction of the current, her true course and distance will be compounded of the course and distance given by the log, and of the setting and drift of current; and the distance made good in a given time, will be represented by the third side of a triangle, of which the distance given by the log and drift of the current in the same time, are the other two sides. The two first cases are evident, and the last may be illustrated as follows.

In the parallelogram A B C D, (Plate I. Navigation, fig. 2.) let A B be the distance run by the ship, in the same time that a current sets from B to C, and A M a meridian; then A C being joined, will be the distance made good; the angle M A B the course per compass, and M A C the true course, or that resulting from the combined motions of the ship and current. For since the current neither assists nor prevents the ship from approaching the line B C, the wind will bring it there, in the same time as if no current existed; and as the wind has no tendency on the current, and the direction of the ship being in the line A B, the current will bring the ship to the line C D, in the same time as if in a calm; therefore, the ship will be found to be at C, the point of intersection of the lines B C, C D; and, consequently, have failed in the direction A C, the diagonal of the parallelogram contained between the distance run, and the drift of the current in the same time.

The setting and drift of the principal currents, are in general known nearly, but with respect to unknown or doubtful currents, the following method is usually employed to ascertain their setting and drift.

In the open ocean, in calm weather, the setting and drift of a current are easily found by taking a boat to some little distance from the ship, which being brought up, by finking from the stern a heavy iron pot or loaded kettle, to the depth of about 100 fathoms; then, the log being hoisted, its being will be the setting of the current, and the number of knots run out in half a minute will be its drift. See Current.

When in sight of land, the setting and drift of a current may be found by observing some remarkable place, or places on shore, at certain intervals of time.

Examples.

1. A ship sailed S. by W. 21 hours, at the rate of 8 knots an hour, in a current that set E.N.E. 3 miles an hour, required the course and distance made good in that time.
By Construction.

Describe the circle N.E., S.W., (fig. 4) in which N.S. represents the meridian of the place from, and E.W. the parallel of that place, these lines being at right angles to each other; from the centre C, draw the S. by W. line C B, equal to 168 miles (=1 x 8) the distance run in a given time; and from B, draw B D in an E.N.E. direction, which make equal to 63 miles (=21 x 3); join C D, which will be the distance made good, and will measure 1.3 miles, and the measure of the angle S C D being applied to the line of chords, will be found to be 10° 15' E.

By Calculation.

In the triangle C B D, are given the sides C B, B D, equal to 168 and 63 respectively, and the included angle C B D equal to five points, the supplement of the number of points contained between the E.N.E. and S. by W. rhumbs; to find the angles C and D, and the side C D.

To find the angles.

<table>
<thead>
<tr>
<th>Distance</th>
<th>B C = 168</th>
<th>B D = 63</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum</td>
<td>231</td>
<td>105</td>
</tr>
<tr>
<td>Difference</td>
<td>126</td>
<td>105</td>
</tr>
<tr>
<td>Angle C B D = 5 points,</td>
<td>Sum of C and D = 11 points,</td>
<td>Half</td>
</tr>
<tr>
<td>5 5' points = 61° 52'</td>
<td></td>
<td></td>
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</tbody>
</table>

As the sum of the fides | 231 | 2 3 0 3 5 1 |
Is to the diff. of the fides | 105 | 2 0 3 1 1 9 |
So is the tang. of half sum angles 61° 52' | 10 2 7 1 8 9 |

To tangent of half diff. angles. 40° 22' = 9 2 9 4 7

Angle D | - | 102° 14' |
Angle B C D | - | 21° 30' |
Angle B C S | - | 11° 15' W. |

True course S C D = 10° 15' E.

To find the distance C D.

As the sine of B D C | - | 102° 14' | 9 9 0 0 0 2 |
Is to the sine of C B D, | 50° 15' | 9 9 1 9 8 5 |
So is B C | - | 108 | 2 2 2 5 3 1 |

To the distance C D | - | 142° 9 | 2 1 5 5 1 4 |

Remark.

The most expeditious method of performing questions of this kind, is by inspection; by this method of operation, the preceding example is resolved as follows.

<table>
<thead>
<tr>
<th>Course</th>
<th>Diff.</th>
<th>Diff. Lat.</th>
<th>Departure.</th>
</tr>
</thead>
<tbody>
<tr>
<td>S by W.</td>
<td>168</td>
<td>N.</td>
<td>S.</td>
</tr>
<tr>
<td>E.N.E.</td>
<td>63</td>
<td>24.1</td>
<td>164.8</td>
</tr>
<tr>
<td></td>
<td>24.1</td>
<td>164.8</td>
<td>58.2</td>
</tr>
<tr>
<td>S. 10° E.</td>
<td>143</td>
<td>140° 7'</td>
<td>25.4</td>
</tr>
</tbody>
</table>

11. A ship from a certain headland in the latitude of 34° 00' N., sails S. 12 miles in three hours, in a current that sets between N. and E., and then the same headland is found to bear W.N.W., and the ship to be in the latitude of 31° 52' N, required the setting and drift of the current.

By Construction.

Having drawn the compass N.E.S.W., (fig. 5) let A represent the place of the ship, and draw the S.E. line A B equal to 12 miles, also the E.S.E. line A C.

Set off from A upon the meridian A D, equal to 8 miles, the difference of latitude, and through D draw D C parallel to the E. and W. line W.E., meeting A C in C. Join C and B with the right line B C; then C will be the ship's place, the angle A B C the setting of the current from the S.E. by S. line, and the line B C will be the drift of the current in three hours.

By Calculation.

In the triangle A D C, right-angled at D, are given the difference of latitude A D, equal to eight miles, the angle D A C equal to 67° 30'. Whence for A C the distance the ship has failed, it will be:

As radius - - - - 10 0 0 0 0 0 0 |
12 is to the secant of the course D A C 67° 30' = 0.417167 |
So is the difference of latitude 8 0.690699 |

To the distance | 20.9 | 1 3 2 0 2 5 |

Again, in the triangle A B C, are given A B, equal to 12 miles, A C equal to 26.9, and the angle B A C equal to 38° 45', the distance between the S.E. by S. and E.S.E. lines: Whence for the angle at B, it will be,

As the sum of the sides A D and A B 32.9 = 1 5 1 7 2 0 |
Is to their difference - - - - 8.9 = 0.4939 |
So is the tangent of half the sum of the angles B and C = 73° 7' = 10 5 1 8 0 6 |

To the tangent of half their diff. 41° 43' = 9 0 5 0 2 5 |

Consequently, the angle B is 114° 51', and, therefore, the setting of the current will be N. 51° 6' E. or E. by N. 2° 21' E. Then for B C, the current's drift in three hours, it will be,

As the sine of B - - - - 114° 51' = 9 2 5 5 3 0 |
Is to the sine of A - - 33° 45' = 0.74 1 7 4 |
So is the distance run A C = 10.9 = 1 3 2 0 2 5 |

To B C | 12.8 | 1 1 6 7 1 0 |
the current's drift in three hours, and consequently the current sets E. by N. 2° 21' E. 4.466 miles an hour.

III. A ship at sea in the night has fight of Scilly light, bearing N.E. by N. distant four leagues, it being then flood tide, setting E.N.E. 2 miles an hour, and the ship running at the rate of five knots an hour; what course and distance must the ship fail to make the Lizard, which bears from Scilly E. $\frac{1}{2}$ S. distance 17 leagues?

By Construction.

Draw the N.E. by N. line A S = 12 miles, (fig. 6;) hence S will represent Scilly. From S draw S E = 51 miles, and parallel to the E. $\frac{1}{2}$ S rhumb; then L will represent the Lizard; draw L C parallel to the E.N.E. rhumb, and equal to two miles, and make C D equal to five miles; or, because these numbers are too small to determine the triangle with precision, let equimultiples of them be taken, as 10 and 25. From A draw A B parallel to C D, meeting L C,
CURRUS, in Ornithology, a name given by Frisch, Av. t, 44, to a variety of the Muscicapa Ariciapilla of Graev in; which see—and also to varieties of the Motacilla Ariciapilla of Gmelin; and also to the Muscicapa grisea of Gicthe, which see respectively.
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nine between Arrabone and Alicznum; supposed to be Bologna.  

CURTAILING, in the Mercantile, the docking, or cutting off a horse's tail.  

The practice of curtailing is nowhere in vogue to much as in England; it being a popular opinion, that the cutting off the tail renders the horse's chime or back the stronger, and more able to bear burdens.  

The amputation is usually made between the fourth and fifth joints of the tail; a ligature being first tied tight about the place, to prevent the flux of blood; and the raw lump afterwards feared up with a hot iron, till the extremities of the vessels be all flopped.  

This absurd and barbarous custom is now in great measure out of fashion; and horses are allowed to enjoy the use, and retain the beauty of their tails, as given to them by nature.  

CURTAIN, in Fortification. See Curtia.  

CURTAIN, in a Fire-ship, are pieces of a coarse canvas, about three quarters of a yard wide, and a yard long, thickened in a melted composition of pitch, sulphur, rosin, tallow, and tar, and covered with sawdust on both sides.  

CURTATE DISTANCE, in Astronomy, the distance of a planet's place from the sun or earth, reduced to the ecliptic; or, the interval between the sun or earth, and that point where a perpendicular, let fall from the planet, meets with the ecliptic.  

CURTATION, in Astronomy, the interval between a planet's distance from the sun, and the curtate distance.  

From the preceding article it is easy to find the curtate distance, which is the manner of constructing tables of curtailation obvious.  

The quantity of inclination, reduction, and curtailation of a planet, depending on the argument of the latitude; Kepler, in his Rudolphin Tables, reduces the tables of them all into one, under the title of Tabule Latitudinaria.  

CURTIALIA, or Curtialium, in Land, a yard, backside, or piece of ground, lying near a dwelling-house.  

CURTILE, in a Fire-ship, a piece of canvas of usual use in them, in war; and the invention of them, according to Diodorus, goes back to the highest antiquity. Namus used them against the Egyptians, and the nations that opposed the Israelites also fought in them.  

CURTINA, a name given to king Edward the Confessor's sword, which is the first sword that is carried before the kings of England at their coronation.  

It is said, the point of it is broken, as an emblem of mercy.  

CURTIS, GIROLAMO, in Biography, a Bolognese painter, called il Dentone, from the circumstance of his carrying his mouth half open, as to discover two large front teeth. He was born in the 16th century of very poor parents, who had taught him the business of a thread-maker. At the age of 25, however, he began to practise design in company with Lorenzo Spada; but finding the study of the human figure too arduous an undertaking, he determined to confine his exertions to the attainment of perspective, and the practice of that species of decorative painting which the Italians term quadratura. He accordingly received some instructions in this way from Baglione, and grounded himself in architecture by studying Vignola and the finest remains of the ancients at Rome. Curtis soon acquired the reputation of being one of the best artists in his line, and was eagerly employed in many great works in Rome, Bologna, Parma, and other parts of Italy, and in particular in the first-mentioned city, where he painted a hall in the palace of prince Lodovico, which was extremely admired, and judged far to surpass the hitherto unvalued works of Gio. Alberti in the Sala Clementina in the Vatican. He died at Parma in 1631. Lazz. Stor. Pitt.  

CURTI, FRANCESCO, an engraver, born in Bologna, who flourished in the 15th century. His style seems formed on that of Cherubino Alberti, though the execution is less masterly, and the extremities of the figures drawn with less correctness. He engraved after Guercino, Parmigianino, Guido, and other celebrated masters. The following are amongst the best of his works.  

"The Virgin teaching the Child Jesus to read;" from Guercino. A drawing-book of the designs of the same artist. A set of 16 portraits, 1633. Two heads of the Virgin and St. Catherine, upon the same plate." Heineken. Strutt.  

CURTIUS, BERNARDINO, probably a relation of the preceding, and also an engraver. This artist executed a great number of portraits, besides other works, which, however, are not much esteemed. We shall only notice the following:  

"An emblematical subject from Luc. Ferrar, a muddling sized plate, lengthways. The Virgin, a half figure, with the Infant Jesus and the Child St. John, 1649." Heineken. Strutt.  

CURTICONE, in Geometry, a cone whose top is cut off by a plane parallel to its basis; called also truncated cone.  

CURTILAGE, CURTILAGIUM, in Law, a yard, back-side, or piece of ground, lying near a dwelling-house.  

CURTILES TERRAE. See Court-lands.  

CURTILLA, in Ornithology, a name given by some to the Corvus pectoralis of Gmelin, which see.  

CURTIN, CURTAIN, or Curtain, in Fortification, is the part of a wall which joins the flank of one baillage or demi-baillage to that of the baillage or demi-baillage next to it, whether it be in the body of the place, or in a crown-work, horn-work, &c. The curtains, with the flanks and faces of the baillons, form the essence of the body of a place.  

Ducange derives the word from the Latin curtia, quasi minor curtis, a little county-court, inclosed with walls; he says, it was in imitation hereof, that they gave this name to the walls and parapets of cities, which inclose them like courts; he adds, that the curtains of beds take their name from the same origin; that curtis was the name of the general's, or prince's tent; and that those who guarded it were called curtinarii and curtifani.  

The curtia is usually bordered with a parapet five feet high; behind which the folders stand to fire upon the covert-way, and into the moat.  

Belligers seldom carry on their attacks against the curtia, because it is the belt flanked of any part.  

CURTIN, ANGLE AND COMPLEMENT OF. See ANGLE and COMPLEMENT; see also MILITARY CONSTRUCTION.  

CURTIS, WILLIAM, in Biography, an eminent botanist and entomologist, was born at Alton in Hampshire, in 1746. His family were quakers, and his father a tailor; but he was at the age of fourteen bound apprentice to his grandfather, an apothecary in his native town. It happened that the offer of an adjoining inn was a practical botanist, versed in the study of Gerard and Parkinson's herals. Such an intimacy for their son sober parents might have deprecated, and ambitious ones have contemned; yet hence the youthful Curtis imbied that taste for natural knowledge
Mr. Curtis was very early led to combine the study of insects and their metamorphoses with that of plants, and his various gardens were furnished with accommodations for this pursuit. Hence he became an author; his first publication being a pamphlet entitled, "Instructions for collecting and preserving insects; particularly Moths and Butterflies, illustrated with a copper plate," and printed in 1771.

In the following year he published a translation of the *Fundamenta Entomologiae* of Linnaeus, entitled, "An Introduction to the Knowledge of Insects," many valuable additions being subjoined to the original treatise. These two pamphlets have contributed more than any similar works to diffuse a knowledge of scientific entomology in England, and to engrat the dilatate liberal stock of mere collectors, a rare sight of enlightening and communicative observers of nature; who no longer hoard up unique specimens, and selith acquisitions, but contribute their discoveries and their experience for the benefit of the agriculturist, the manufacturer, or the phystician.

The celebrity which these publications procured for their author was soon altogether eclipsed by what arose from his botanical labours, which have placed him in the very first rank of English writers in that department of science. In 1777 appeared the first number of his *Flora Londinensis*, containing 16 folio plates, with a page or more of letter press containing a description in Latin and English, with synonyms, of each plant, and copious remarks on its history, use, qualities, and the insects it nourishes. Each number was fold at half a crown plain, 5 shillings coloured, and some copies, finallish with extraordinary care, were fold at seven shillings and six pence. The first artist employed in making the drawings for this work was Mr. Kilburn, who used a camera obscura for the purpose; his sketches were finished with Indian ink, before the colours were laid on. The performances of this artist have not been excelled in any similar work. When from other engagements Mr. Knorre was obliged to relinquish his task, Mr. Sowerby was employed, and maintained undiminished the perfection of the figures. After him Mr. Sydenham Edwards has been engaged by Mr. Curtis, with no less credit, both in the botanical and the entomological departments. Farther mention must be made of the plates of the *Flora Londinensis*. The perfect and exact copies of the types of flowers, the beauty and botanical accuracy are alike eminent, and it is only to be regretted that the manufactory of paper, as well as the type and copper-plate art, were in no degradated state when this book was published. For this, its author cannot be responsible, nor are the defects of any moment in the eyes of learned or scientific readers. To them the *Flora Londinensis* is a mine of original, solid, practical information, conveyed in a style of candour and unfeigned love of science, by which the author, as well as his subject, steal the hearts of his readers. It has already been observed, (Transatlutions of the Linnaean Society, v. iv. p. 360.), that the work in question, "independent of its excellent figures, ranks next to Ray's *Syllus*. In original merit and authority upon English plants." It may be added that the works of Curtis have tended, more than any other publications of their day, to give that tone of urbanity and liberality to the science, which every subluminate writer, of good character, has observed. Wherever their author swerved in any degree from this candour, which was very seldom, and not always without provocation, it was always to his own loss, and he was thus led into one of the very few mistakes that he has committed; but these we shall confine to oblivion. His mention of Mr. Hadon's "usual inaccuracy" is most reprehensible. The author of the *Flora Anglica* was indeed blameable for treating the infant publication of Curtis with lofty neglect, but it is not true that he was "usually inaccurate" in his own labours. Mr. Curtis conducted himself rather more uncandidly towards the work entitled *English Botany*, because he conceived it an encroachment on his own botanical domain, of which a narrative is given in the preface to its seventh volume, unnecessarily to be repeated here. His fame and his work were superior to all rivals, and the object of his unjust displeasure is proud to bear testimony to his merit, with which no person was better acquainted. The *Flora Londinensis* was extended to fix *fasciculi*, of 72 plates each. It is to be regretted that the feelings above alluded to occasioned its author in the latter part to describe, from garden specimens, several plants out of his originally intended limits, respecting which he could give no particular information; while numerous species growing near London remained unexplained and ill-understood. A botanist who had like him so admirably illustrated the genera *Polygonum*, *Rumex*, *Chenopodium*, and several others, makes us regret that his genius was ever diverted from its original bent. On another occasion however we rejoice that it was otherwise employed. Ten years after the beginning of his *Flora*, Mr. Curtis undertook a new publication, the Botanical Magazine, a work whose fate has been extensive beyond all former example, and which is in every respect worthy of its author. No book has more diffused a taste for unfathomed nature and science. It rewarded its contrivers with pecuniary emolument as well as with merited celebrity, and is still continued with unabated utility. It is designed to be a general repository of garden plants, whether previously figured or not in other works, but it has often had the advantage of giving entire novelties to the public.

In the year 1782, Mr. Curtis published a history of the brown-tailed moth, an insect confounded by Linnaeus under his *Phalaena Clyprorrhoea*. The design of this pamphlet was to allay the alarm which had been excited in the country round the metropolis, by an extraordinary abundance of the caterpillars of this moth, and which was so great, that the parish officers offered rewards for collecting their caterpillars.
pills, and attended in form to see them burnt by buffets at a time. It was one of those popular alarms which every now and then arise among the ignorant multitude, and which vanish before the first ray of common sense. When the natural history of the insect was inquired into, and compared with that of others, no cause for any great apprehension could be discerned; and, indeed, the subsequent years were not more abundant in this species than usual.

Besides the above works, Mr. Curtis published "Practical Observations on the British Grapes," in 8vo.; his truly praiseworthy aim being to direct the farmer to a knowledge and discrimination of the species and their qualities. He also, from time to time, printed catalogues of his garden. He was induced, by the unfortunate alarm which he conceived at the publication of "English Botany" above-mentioned, to put forth diminished figures in octavo of his great Flora; but these met with no approbation nor success, and were soon discontinued. His "Lectures on Botany," rendered needlessly expensive by superfluous coloured plates, have appeared since his death; but for this publication he is not responsible. Two admirable entomological papers of Mr. Curtis are found in the "Transactions of the Linnean Society," of which society he was one of the original fellows. The first of these is an account of the Sipha Griffes and Curlcula Latapa, two coleopterous insects very destructive to willows. The other paper is intended to shew that the Aphides, or lice of plants, are "the sole cause of the honey-dew," a new theory on the subject, and perfectly just, as far as concerns the most common kind of honey-dew. This paper was digested by the president from the unfinished materials of its author, and communicated to the society after his death, which happened on the 7th of July, 1799, after he had for near a twelvemonth laboured under a disease in the chest, supposed to be of a drophical nature; but which was rather, perhaps, an organic affection of the heart, or of the great vessels immediately connected with it. His remains were interred at Battersea church. He left behind him the character of an honest friendly man, a lively and entertaining companion, and a good master. He was ever ready to encourage and assist beginners in their favourite science, and always endeavoured to render that science as attractive as possible. It must not be forgotten that he was one of the first who, in spite of authority, contributed to remove some reproaches to which it was justly liable on the score of indelicacy. His example has been followed by other writers (see Curtisia); and its salutary effects have only in one disgraceful instance, which we shall not drag forth from its merited obscurity, been attempted to be counteracted. This laudable praise is justly paid to Mr. Curtis by an excellent and very eminent friend, who has given the world a history of his life and merits in the Gentleman's Magazine for 1795, whence we have derived many of the above particulars.


E.E. Ch. Calyx four-parted. Petals four. Drupe superior, roundish, succulent; not four or five-celled.


CURTUS, M., in Biography, a Roman whose patriotism has been celebrated by Livy; and though the fact, which is recorded in connection with his name, and by which he is rendered illustrious, has been the subject of much discussion and doubt, yet there was unquestionably some foundation for the story, which is thus recorded by the historian. "In the year 392 B.C. the city, the ground in the midst of the forum, either from an earthquake, or from similar cause, opened and left a vast chasm, which could not be filled by any human art. The oracle was consulted, who declared that the Roman State would endure for ever, provided they threw that into the gulf in which the Romans were most powerful. Curtius heard the answer, and asked if his countrymen possessed any thing so valuable as their arms and courage? The courage of the hero was well known; his question caused the most profound silence; Curtius turned his eyes towards the Capitol, and the temples of the gods overlooking the forum, and stretching his hands first towards heaven, and next towards the bottom of the gulf, solemnly devoted himself. He then, fully armed, mounted his horse decorated in all his caparisons, and plunged into the chasm; the applauding people of both sexes throwing after him flowers and fruit." This was afterwards called the Curtian lake, in memory of the deed. Livy, tom. ii. p. 67, 69. Mattaire's edit.

CURTUS, QUINTUS RUFUS, a Roman historian, who is known now only for his history of the reign of Alexander the Great, is supposed to have flourished in the reign of Vespasian or Trajan; but many doubts have been entertained on the subject. No notice is taken of his work till the twelfth century, though it is thought that Sutonius refers to the author as one among the eminent rhetoricians of those times. This history was divided into ten books, of which the first two, the end of the fifth, and the commencement of the fifth are lost; it has ever been esteemed for the elegance, purity, and floridness of its style. It is, however, vastly defective as a history, abounding with anachronisms, and various geographical mistakes. The Elzevirs edition of this work, and also the Dolphin editions of 1678 and 1724, and the Variorum of 1738, are highly regarded by critics. See Preface to the Delphi edit.

CURTUS, MATTHEW, a native of Padua, acquired considerable reputation for his skill in medicine, which he taught in succession at Padua, at Florence, at Bologna, and at Pisa. From Pisa he was called to Rome by the pope Clement VII., and appointed his physician. From an inscription on his monument, erected to perpetuate his memory, by Cofano de Medici, it appears that he died in 1544, aged seventy years. His works, several of which passed through many editions, and appear to have been in great vogue, are, "De Verbo fecundio cum aliis affectis," "Pictura maxima in Pleuritis;" Lugd. 1532, 8vo. "In Munditi Anatomia explication," 1532, 8vo. "De curariu
CURANDIS febribus Ars Medica, 1561, Svo. For the remainder, see Haller Bib. Med. Another Italian physician of the name, probably of the family, Nicholas Cottaus, taught medicine at Padun for twenty-six years. He left "Methodus consultandi, Venetius," 1603, folio, "Libelbus de Medic. incerti. purgantium, &c."

The following but 1 in separate figures;

The different towns and globular the a perfect

early globular, that the eye cannot perceive its deviation from a perfect sphere. Such is likewise the case with oils, spirits, mercury, and other fluids. But in their usual states of existence, liquids are acted upon by other forces, which may either combine with, or oppose their attraction of aggregation, according to a variety of circumstances; whence they are obliged to assume shapes different from those which they would assume in consequence of their aggregation only. The other forces are their gravitational power, or the force by which they are drawn towards the centre of the earth; the attraction of affinity, and the attraction of cohesion, viz. the peculiar degree of attraction which every liquid has for other bodies. Thus, if a small drop of water be placed upon a dry and clean plate of glass, it will remain nearly of a globular form; its attraction of aggregation, which draws every particle of it towards its centre, being stronger than its gravity, and likewise more powerful than its cohesion or attraction towards the glass, which it touches in a very small spot. This attraction, however, is sufficient to retain the drop of water, when the glass is turned downwards. But if the drop be spread over the surface of the glass, then the film of water will adhere to the glass with much greater force, nor will it recover its globular force, because by spreading the drop, its particles have been brought nearer to the surface of the glass, and in contact with a far greater extent of it. They have also been removed farther from each other, which has weakened the attraction of aggregation in a very great degree. When a pretty large drop of water is placed upon the glass, the upper middle part of it will be nearly horizontal, its gravity being more powerful than its aggregation. If the water be in considerable quantity, and it be put in a cup, or glass, then the attractions of aggregation and cohesion being much weaker than the gravitation, the surface of the water will be horizontal, excepting that part of it which lies nearest to the sides of the cup, which will be attracted, and ascending a little way will draw part of the contiguous fluid above the horizontal level, in consequence of its attraction of aggregation, so as to form a concave surface to a certain extent.

Thus, if, by a little care, more water be added, so that the fluid may project above the edge of the cup or glass, then the water close to the edge will assume a surface very convex; it being to a certain degree prevented from running over, both by the attraction of aggregation, and the attraction towards the sides of the cup or glass. The like experiments repeated with other fluids, will be attended with results of the same species, but differing in degree, according to the nature of the fluid, and its attraction towards the other substances concerned in the experiments. Thus, if a small drop of mercury be placed upon the flat surface of a piece of glass, it will assume a globular form, in consequence of its attraction of aggregation; and it will adhere to the glass, when this is turned upside down, on account of its attraction of cohesion. But it will be found impossible to spread it over the surface of the glass, like water, because its attraction of aggregation is much more powerful than its cohesion to the glass. And it is far the same reason that if a glass or china cup be partly filled with mercury, this fluid will not rise, like water, towards the sides of the cup; but it will form a convex curve of considerable extent.

The different degrees of attraction between a given fluid and other substances, is easily shown by the effects of contact. Thus a small globule of mercury laid upon paper will adhere to glass when the latter is brought into actual contact, and is drawn by the glass from the paper; and in the same manner if a larger quantity of quicksilver be brought in contact with it, the small globule will leave the glass.
CURVATURE.

With respect to the curvature of the sky, an obvious phenomenon has been remarked from time immemorial, and several theories have been formed in explanation of it. The phenomenon is, that the hazy heavens, or the ideal vault, upon which the stars seem to be fixed, has the appearance, not of a spherical surface, but of a flattened vault, having its upper part nearer to us, than its lower edge, viz. the sides which slant towards the horizon. And the same constellations appear to be much larger when it approaches the horizon, than when it slants nearly overhead. Yet when measured with a quadrant, its dimensions are the same in either situation. This is likewise the case with the sun and the moon. See Horizontal Moon, and Sun.

In explanation of this phenomenon, several conjectures have been made, and most of them may be seen in Dr. Priestley's History of Optics. But it would be needless to place before our readers any other hypothesis, besides that which seems to be by far the most rational and satisfactory. According to this hypothesis, the phenomenon is considered as a deception of our sight, or rather of the judgment formed on the perception of our eyes. And this supposition is grounded upon the following well known facts, and obvious deductions. In judging of the distances of objects, we are assisted by four circumstances; viz. the adjustment of the axes of our eyes; the comparison of the situation of the object in question with others which slant at known distances; the angle under which a known object is seen; and the degree of diffusiveness with which the object appears to us.

In looking at an object, we naturally move our eyes so that their axes produced may meet at that object, and according as that object is removed farther and farther from us, the angle made by the axes of the two eyes becomes smaller and smaller; hence by this motion of our eyes we are enabled to judge with sufficient accuracy of the distance of the object within certain limits. But when the object is removed a vast way from us, then the adjustment of the eyes becomes insensible, and of course the distance cannot be determined from it. Hence it is, that when we look at an object with only one eye, we form a very imperfect judgment of its distance. The effect arising from the situation amongst other known objects does not require any farther explanation.

When the object is familiar to us, such as a man, a horse, &c. the angle under which we see it, is sufficient to inform us of its distance; for the farther the object is from us, the smaller must the angle be under which we see it. The last circumstance is the diffusiveness of the appearance; and since small objects become invisible to us beyond a certain distance, it follows, that by losing sight of the middle parts of a large object, we see the latter more and more confined and indistinct, in proportion as it is removed farther and farther from us. Hence, by a natural association of ideas, when we see an object indistinctly, we are led to suppose, that its situation is far from us.

It is to be remarked, that since the earth is surrounded by an atmosphere which is loaded with vapours in various states of existence, the same object, at the very same distance, will appear to be farther from us when its situation is near the horizon, because in that case the visual rays pass through a great portion of the atmosphere, or partially obscurating medium, and the object appears indistinct; than when it slants near the zenith, where it looks brighter, and more distinctly, because the visual rays pass through a smaller portion of the atmosphere. And our judgment is led to make the same conclusion with respect to that part of the apparent vaulted heavens upon which we see the stars. But independent of the stars, or sun, and moon, the colour itself of the sky, being a more determined azure towards the zenith, and more diluted towards the horizon, is sufficient to impress us with the idea of the sky being more extended towards the horizon, than overhead.

CURVATURE, in Mathematics. A straight line drawn through any point of a curve-line is such a manner that no other straight line can be drawn through the same point, so as to pass between the first line and the curve on either side, is called a tangent of the curve-line. In like manner, of all the circles that can have a common tangent with a curve line at any proposed point, that one, which coalesces so intimately with the curve, that none of the rest can pass between it and the curve on either side, is said to have the same curvature as the curve at the proposed point: or it is called the circle of equal curvature, or the osculating circle.

Of all curves, the circle is that which is the most simple in its nature. It depends only on one arbitrary quantity; for when the radius of a circle is given, or found, the whole figure is determined. The periphery of a circle, too, being perfectly uniform, has an equable curvature throughout. For these reasons, it seems natural to compare curve-lines with the circle, next after the straight line. The tangents mark the directions of the several parts of a curve-line: the circles of equal curvature enable us to judge of the deviations from the rectilinear course.

It will readily be allowed, that the greater the radius of a circle is, the less is the curvature of its periphery. This is not an inference deduced from mathematical principles; it is a proposition, of which we have a general conception, and which seems to flow naturally from the notion we have of a curve-line. There can be no measure of curvature fit to be the basis of scientific reasoning, independent of definition. No part of the mathematics has been treated more vaguely, or has been obscured by more paradoxes, than the consideration of curvature. The exploded mysteries about the angle of contact, once so much agitated, deserve not to be drawn out of merited oblivion. The obliquities and incongruences that occur in such discussions, arise solely from the
CURVATURE.

want of due care in laying down precise definitions. After having reflected on this subject, it appears most convenient to measure the degrees of the curvatures of different circles by the inverse proportions of the radii. Thus a circle, that has a radius twice as great as another, will, according to this definition, have only half the curvature. Having thus fixed what is meant by the proportions of the curvatures of different circles, we can compare the degrees of curvature of all other curves by the help of the osculating circles.

It is to be remarked, that the definition of the equicurvature circle, which we have laid down, is independent of any affirmed measure of curvature. It supposes that, when an infinite number of circles have a common tangent with a curve-line, some of them coalesce with the curve more intimately than others: and that there is one which coalesces with the curve more intimately than all the rest. This is the equicurvature circle, and the degree of curvature is considered to be sufficiently determined, when we have ascertained the circle which has the closest possible contact with the proposed curve. What is really useful in this inquiry depends upon the magnitude and the position of the equicurvature circle, and not upon any nice and subtle disquisitions concerning the nature and the degrees of contact. There are cases of continued curvature, where a left circle approaches nearer to a curve line than a greater, without any limit; and there are other cases where a greater circle approaches nearer to a curve line than a left, without any limit: in the former instances, the curvature is said to be infinitely great; and in the latter, the curvature is said to be infinitely small. In all other cases of continued curvature, the degree of curvature is finite, and is measured by the equicurvature curve.

The determination of the osculating circles of curve-lines is a subject that has been much treated of by mathematicians; and it is important on account of its usefulness in the doctrine of central forces. In order to lay before our readers a succinct view of what is most valuable in this research, we shall first treat of the osculating circles of the conic sections in a geometrical manner: and, in the second place, we shall give some account of Mr. Huygens’s Theory of Evolute and Involute Curves, with its application to the present subject.

**Of the Osculating Circles of the Conic Sections.**

**Prop. I.**

Let B D, (Anath. Plate III. fig. 1 and 2) be ordinately applied to the axis of a paraboloid, or to the transverse axis of an ellipse, or hyperbola; and let B A and D A, drawn perpendicular to the lines touching the curve at B and D, meet in A: then are B A and D A (which are manifestly equal to one another) less than any other line drawn from A to the curve. And, in the ellipse, if B E be an ordinate to the conjugate axis; and if B E and E K, perpendicular to the tangents at B and E, intersect in K; then are B K and E K (equal to one another) greater than any other line drawn from K to the periphery of the ellipse.

Let the lines touching the conic section at B and D meet in F, and draw the diameter D C: let M be any point in the curve, and draw M N, terminated by the curve, parallel to D F, and let M N cut C D in O, and B F in L; also draw O R parallel to D A, and let it cut B A produced in R. It is manifest that B F = F D, and, because,

\[ BF : FD :: BL : ML \times LN. \]

Therefore, \( BL = ML \times LN \). Consequently, if a circle be described through the points B, M, and N, (5. 4. E.) B H will be a tangent of that circle, (37. 3. E.): therefore, the centre of that circle is in the line B R, perpendicular to B H, (19. 3. E.): but the same centre is in the line O R, (3. 3. E.): for M N is bisected in O, and O R (parallel to D A) is perpendicular to M N, (parallel to D F): therefore, R is the centre of the circle described through the points B, M, and N. But A B is the leaf of all the lines that can be drawn from A to the periphery of the circle, whose centre is R, and the radius R B, (7. 3. E.): therefore, A B is less than A M. In like manner, it may be shown, that A B is less than any other line drawn from A to the curve.

And the like reasoning will equally apply in the case of the ellipse, when B E is ordinarily applied to the conjugate axis: but, in this case, the point R, which is the centre of the circle that passes through the points B, M, and N, will fall between the points K and B: therefore K B is the greatest line that can be drawn from K to the circumference of that circle, (7 and 8. 3. E.): therefore, K B is greater than K M. Therefore, K B and K E are greater than any other line drawn from K to the periphery of the ellipse.

**Cor. 1.** In all the conic sections, the periphery of a circle described from the centre A, with the radius A B, will touch the curve at B and D, (that is, it will touch the tangents of those conic sections at those points), and, every where else, will be wholly contained within the conic section. And, in the ellipse, the periphery of a circle, described from the centre K, with the radius K B, will touch the ellipse at B and E, and, every where else, will be wholly without the ellipse.

**Cor. 2.** In the parabola and hyperbola, a circle, touching the curves internally at B (not the vertex of the axis), and having a greater radius than A B, will necessarily meet the curve again in another point different from B.

For such a circle will wholly include the circle described with the radius A B: and, consequently, it will include the point D: and, because the parabola and hyperbola are continuous curve-lines, extending to an indefinite distance both ways, therefore, they will necessarily cut the circle in two points at least, one on each side of the point D.

**Cor. 3.** And if a circle be described to touch an ellipse at the point B (not the extremity of either axis), with a radius that is greater than A B, but less than K B, that circle will necessarily meet the periphery of the ellipse again in another point, different from B.

For the circle described with the radius, A B, will be wholly within such a circle, and the circle described with the radius, K B, will be wholly without it: consequently, the point D, will be with in such a circle, and the point E will be without it. And, because the periphery of the ellipse is a continuous curve-line returning into itself, therefore it will necessarily meet the circumference in two points, at least, one on each side of the point D.

**Lemma.** Let A, B, C, and D, be four right lines, such that \( A \times B = C \times D \); and let the sum of A and B be likewise greater than the sum of C and D: then the greater of the two lines, A and B, is the greatest, and the other is the least of all the four lines.

Let A be greater than B, and E greater than D; and, if it be possible, let C be greater than A: then, because \( A \times B = C \times D \), therefore

\[ C : A :: B : D. \]

Consequently, the sum of C and D is greater than the sum of A and B, (25. 5. E.) contrary to the hypothesis. Therefore A is greater than C and D, and B is less than C and D.

**Prop. II.**
**Prop. II.**

Let $BD$ (fig. 3 and 4.) be ordinately applied to the axis of a parabola, or to the transverse axis of an ellipse, or hyperbola; and let a circle, which touches the conic section at $B$, cut the curve again in $M$ (Cor. 2 and 3 of Prop. I.); then, if $MN$ be drawn parallel to the tangent $DF$, the circumference of the circle will pass through $N$ and the part of the circumference of the circle that is on one side of $MN$ will be within the conic section, and the other part of the circumference will be without the conic section.

Produce $MN$ to meet the tangent of the curve, drawn from $B$ in $L$. Because the tangents drawn from $B$ and $D$ are equal to one another, therefore, $ML \times LN = BL^2$; therefore the circle which touches the conic section at $B$, and passes through $M$, will likewise pass through $N$.

Draw the diameter $DC$, cutting $MN$ in $O$, and make $RO$ perpendicular to $MN$. Let a line, drawn parallel to $MN$, or $DF$, cut the circle in $P$ and $Q$, the conic section in $T$ and $S$, the diameter $DC$ in $G$, the line $RO$ in $I$, and the tangent $BF$ in $K$. It is manifest, that $MN$ is an ordinate of the diameter $DC$; and, because $RO$ bisects $MN$, one chord of a circle, at right angles, it will bisect all the chords parallel to $MN$. Thus $PI = IQ$, and also $TG = GS$; consequently, $KP + KQ = 2KI$, and $KT + KS = 2KG$. Since the line, $RO$, crosses the diameter of the conic section at the point of intersection, $O$, it is plain that $KG$ is greater than $KI$, when the parallel is on one side of $MN$; and, on the contrary, $KI$ is greater than $KG$, when the parallel is on the other side of $MN$.

Therefore, in the former case, $KT + KS$ is greater than $KP + KQ$; but, in the latter case, $KP + KQ$ are greater than $KT + KS$.

Because the tangents, $BD$ and $DF$, are equal to one another, therefore $KT \times TS = KB^2$; but $KP \times KQ$ is also $KB^2$; therefore, $KT \times TS = KP \times KQ$.

From what has now been shown, it follows that $KS$ is greater, and $KT$ less than $KP$ or $KQ$. (Lem.), when the parallel is on one side of $MN$; and, on the contrary, that $KQ$ is greater, and $KP$ less than $KS$, or $KT$, when the parallel is on the other side of $MN$. Therefore, the part of the circumference of the circle, on one side of $MN$, is included within the conic section; and the part of the circumference, on the other side of $MN$, is without the conic section.

*Cor. 1.* When the two points $B$ and $D$ are on opposite sides of the line $MN$, the circumference of the circle falls within the conic section on both sides of the point of contact $B$; but when the points $B$ and $D$ are on the same side of the line $MN$, the circumference of the circle falls without the conic section on both sides of the point of contact $B$.

This is manifest, when it is considered that the point $D$ is always included within the conic section.

*Cor. 2.* When one of the extremities of the line $MN$, falls on the point of contact $B$, the circumference of the circle meets the curve of the conic section only in two points.

**Prop. III.**

Let $BD$ (fig. 5 and 6.) be ordinately applied to the axis of a parabola, or to the transverse axis of an ellipse or hyperbola; and let $BM$ be ordinately applied to the diameter of the curve drawn through $D$; then the circle which touches the conic section at $B$, and passes through the point $M$, is the osculating circle at the point $B$; and it will cut off, from the diameter drawn through the point of contact, a chord that is equal to the parameter of that diameter.

For the circle so described will meet the curve of the conic section only in the points $B$ and $M$. (Cor. 2. 2.) and it will be wholly without the conic section on that side of $BM$ on which the point $D$ is, and wholly within the conic section on the other side of $BM$. And if another circle be described so as to touch the conic section at $B$; then this second circle may be wholly included within the conic section (Cor. 1. 1.) or it may cut the curve of the conic section on the same side of $BM$ as the point $D$; in which case the circumference will likewise fall within the conic section on both sides of the point $B$, (Cor. 1. 2.) or the second circle may cut the curve of the conic section on the opposite of $BM$ to the point $D$, in which case the circumference will fall without the conic section on both sides of the point $B$, (Cor. 1. 2.); or, lastly, in the case of the ellipse, the second circle may be wholly without the ellipse, so as to include it. (Cor. 1. 1.)

Now, in none of all these cases does the circumference of the second circle pass between the circumference of the first circle and the curve of the conic section on either side of the point $B$. Therefore the latter circle is the osculating circle, or the circle of equal curvature, at the point $B$.

Again, let the diameter drawn through $D$ meet $BM$ in $O$, and the diameter drawn through $B$ meet the osculating circle in $L$; join $ML$ and draw the tangents $BH$ and $DF$.

Then, in the parabola, having joined $LO$ (fig. 6.) because $BO$, an ordinate to $DO$, is parallel to $DF$, therefore the angle $FDO = \angle DOB = \angle OBL$; it is also manifest that the angle $FDO = \angle BHL$ (because $BH$ touches the osculating circle) the angle $BML = \angle LBO = \angle OBL$; and the triangle $BML$ is isosceles; and $LO$, which bisects the base $BM$, is perpendicular to $BM$. Hence the two triangles $BOL$ and $BDL$, right-angled at $O$ and $D$, are equiangular: therefore $LB : BO :: BO : OD$, consequently $OB^2 = LB \times OD$. Therefore $LO$ is equal to the parameter of the diameter drawn through $D$, or to that of the diameter drawn through $B$.

And, in the ellipse and hyperbola, from the centre $C$, (fig. 5.) draw $CP$ parallel to $ML$, and $CQ$ perpendicular to $BM$: because $BH$ touches the osculating circle, therefore the angle $C BH = \angle BML$, (32. 3. 6.) = the angle $BPC = \angle BOC$, (47. 1. 6.); but $BC^2 - CQ^2 = BC^2 - CO^2 = DO \times OG$, (5. 2. 6.); and $BQ^2 - QC^2 = (because\;OC = OP) \;OB \times B'P$, (5. 6. 2.; therefore $DO \times OG = OB \times B'P$. Therefore $DO \times OG : OB^2 :: OB \times B'P : OB^2$, or $B'P : OB$.

Because $CP$ is parallel to $ML$, therefore $BP : BM :: BC : BL$, and, $BP : \frac{1}{2} BM$, or $BO :: 2 BC$, or $DG : BL$; therefore $DO \times OG : OB^2 :: DG : BL$.

Therefore the chord $BL$ is equal to the parameter of the diameter drawn through $D$, or to that of the diameter drawn through $B$.

The preceding propositions apply only to such points of a conic section.
conic section as are without an axis: for this reason it is necessary to add the following proposition to complete the theory of the osculating circles of the conic sections.

Prop. IV.

If in AB, (fig. 7, 8, and 9.) the axis of a conic section, a line AP be taken adjacent to the vertex, and equal to the parameter of the axis: then a circle having that line for its diameter will be the osculating circle at the vertex of the axis.

In the parabola, let HM, (fig. 7.) an ordinate of the axis, meet the circle upon the diameter AP in L: from the nature of the parabola and the circle. \( HM^2 = PA \times AH \) and \( HK^2 = PH \times HA \): hence, it is manifest that \( HK \) is less than \( HM \): therefore the circle falls wholly within the parabola. Take \( AQ \) greater than \( AP \) and describe a circle upon the diameter \( AQ \): make \( QR = AP \): assume any point as \( H \) between \( A \) and \( R \), and let an ordinate of the parabola drawn from \( H \), meet the circle upon the diameter \( AQ \) in \( L \): then, as before, \( HM^2 = PA \times AH = \frac{QH \times HA}{2} \): and \( HL^2 = QH \times HA \): hence it is obvious that \( HL \) is greater than \( HM \): therefore the circumference of the circle upon the diameter, \( AQ \), falls without the parabola on both sides of the vertex. Hence it is plain that no circle upon a diameter, such as \( AQ \), is that greater than \( AP \), can be the osculating circle: for, if a circle be described upon a diameter less than \( AQ \), but greater than \( AP \); it will follow, from what has been proved, that the periphery of such a circle will be without the parabola on both sides of the vertex, while it will be within the circle upon the diameter \( AQ \): that is, it will be between the two curves. And it is manifest that a circle upon a diameter less than \( AP \), is not the osculating circle; for the periphery of such a circle will be equally within the parabola and the circle upon the diameter \( AP \). Therefore the circle upon the diameter \( AP \), equal to the parameter, is the osculating circle at the vertex of the parabola.

Next, let \( AB \), (fig. 8.) be the transverse axis of an ellipse or hyperbola, and let \( HM \), an ordinate of \( AB \), meet the circle upon the diameter \( AP \) in \( K \). Then, from the nature of the conic section,

\[ BH \times HA : HM^2 = BA : AP, \]

but also

\[ BH \times HA : PH \times HA = BH : HP. \]

Now, it is plain, that the ratio of \( BH \) to \( HP \) is greater than the ratio of \( BA \) to \( AP \) (8. 5. E. et compendio): therefore \( \frac{BH}{BA} = \frac{HA}{AP} \), or \( HL^2 \), is less than \( HM^2 \); therefore the circle falls wholly within the conic section. Take \( AQ \) greater than \( AP \), (and, in the ellipse, less than the axis \( AB \).) and describe a circle on the diameter \( AQ \): make \( BP = AP \), so \( BQ \) to \( QR \); and, it is plain that \( QR \) will be less than \( QA \): draw an ordinate of the conic section from any point \( H \) between \( A \) and \( R \), and let the ordinate meet the circle upon the diameter \( AQ \) in \( L \). Then, as before,

\[ BH \times HA : HM^2 = BA : AP, \text{ or } BR : RQ, \]

\[ BH \times HA : QH \times HA = BH : HQ. \]

But the ratio of \( BR \) to \( RQ \) is greater than the ratio of \( BH \) to \( HQ \); therefore \( HM^2 \) is less than \( QH \times HA \), or \( HL^2 \); therefore the periphery of the circle upon the diameter \( AQ \) falls without the conic section on both sides of the vertex of the transverse axis. Hence, it is manifest, as in the case of the parabola, that the circle upon the diameter \( AP \) is the osculating circle.

And, in the case of the conjugate axis of the ellipse, it may be shown, by similar reasoning, (fig. 9.) that the circle upon a diameter equal to the parameter, falls wholly without the ellipse; and that a circle upon a less diameter falls within the ellipse on both sides of the vertex. Therefore, in this case also, the former circle is the osculating circle of the ellipse.

Thus have we investigated two of the most remarkable properties of the osculating circles of the conic sections, by the help of which the circles in question may be determined in every case. For, in the first place, we have proved that the osculating circle at the point \( D \) falls through \( M \) (fig. 5 and 6.), where \( BM \) drawn parallel to the tangent of the circle at \( D \), cuts the conic section; and, in the second place, we have shown that the same circle, in all cases, cuts off, from the diameter drawn through the point of contact, a part equal to the parameter of that diameter.

Huyghens's Theory of Evolution.

We shall now proceed to explain the theory of evolute and involute curves, invented by Mr. Huygens, which will enable us to determine the osculating circles of any proposed curves. Let \( ABC \), (fig. 10.) be any curve line whatsoever, having its curvatures all turned one way; for the sake of affiling the imagination, the curve \( ABC \) may be conceived to be a mould of wood, or any solid materials; and let a thread, perfectly fine and flexible, be adapted to, or lapped round, the convexity of the curve, or mould; and, while one end of the thread remains immovable on the curve, let the other end, after being stretched to any proposed point \( D \), be moved so as to keep the thread always tight, and to unlap it gradually from the curve; then the movable end of the thread will describe a second curve, the nature of which will depend on the given curve, and the position of the initial point \( D \).

Mr. Huyghens calls the curve \( ABC \), from which the thread is unrolled, the evolute or curvea evoluta; the curve, described by the movable end of the thread, he calls linea evolventae descripta; and it is sometimes termed the evolvent, or more commonly the involute. This last name seems to have originated from a procedure directly opposite to evolution, for if the end of the thread be moved backward on the involute, the thread will be again lapped up on the mould.

The geometrical relation, that subsumes between the evolute and involute curves, when abstrusely enunciated, is this; that every tangent of the evolute curve cuts the involute curve at right angles. Mr. Huygens demonstrates this property in the following manner. Let \( BE \), touching the evolute at \( E \), meet the involute at \( E \), and draw \( EI \) perpendicular to \( EB \): let \( G \) and \( H \) be two points of the evolute on opposite sides of the point \( B \), and \( KL \) and \( GK \) the tangents of the evolute drawn from \( G \) and \( H \), meeting the involute at \( L \) and \( K \); join \( KB \) and \( GB \), and let \( EB \) and \( EI \) intersect \( H \) and \( G \). While the thread is unfolding from the evolute, the parts of it that are detached from the curve, coincide successively with the tangents \( KG \), \( EB \), and \( HL \). Hence \( E = KG + GB \); therefore \( EB \) is greater than \( KG \) + chord \( GB \); and consequently it is greater than \( BK \). (20. I. E.) therefore all the part of the involute, on the same side of \( BE \) as the point \( G \), falls within the circle described with the radius \( BE \); consequently it falls within \( IE \) a tangent of that circle. Again, \( EB + curbe \; BH = LH \); therefore \( EN + NH \) are greater than \( LH \); and \( NE \) greater than \( NL \); but \( NL \) is greater than \( NE \). (19. 1. E.); therefore it is greater than \( NL \); therefore all the part of the involute, on the other side...
side of $BE$, likewise falls within the line $IE$. Therefore $IE$ touches the involute at $E$; that is, the tangents of the common tangent cut the involute at right angles.

From this demonstration it is easily inferred, that the circle described with the radius $BE$ from the centre $B$, falls within the involute on the one side, and without the line on the other side. It has already been shown, in the preceding demonstration, that the arc $EK$ of the ellipsis is within the circle. Let the circle meet $HL$ in $R$, and join $RB$ and $BH$; then $HR$ is less than $RB + BH$, therefore it is less than $RB + B$ in $B$, that is, than $RL$; therefore the arc $EL$ of the ellipsis is without the circle.

It is next to be proved, that the same circle is the oscillating circle of the involute at the point $E$. It has been shown that $EN$ is greater than $NL$; therefore, if a circle be described with a radius $EQ$, greater than $EN$, the arc of the involute between $E$ and $L$ falls within that circle, ($7$. $E$); but the part of the involute between $E$ and $K$ is also within the circle; for it has been shown above, to be within the circle described with the less radius $BE$, therefore the circle described with the radius $BE$, as well as the axes $EL$ and $EK$ of the involute, fall within a circle described with any radius, as $EQ$, greater than $EN$. Again, let $KG$ meet $EB$ in $M$; it is manifest that $MK$ is greater than $ME$; therefore, if a circle be described with a radius $EP$, less than $EM$, the arc $EK$ of the curve will be without that circle, ($7$. $E$); but the part of the curve between $E$ and $L$, is also without the same circle; for it has been shown to be without the circle described with the greater radius $BE$, therefore the circle described with the radius $BE$, as well as the arcs $EK$ and $EL$ of the involute, fall without a circle described with any radius, as $PE$ less than $ME$. Now, however little $EP$ exceeds $EB$, or however little $EP$ falls short of $EB$ yet the tangents $HL$ and $GM$ may be drawn so near to $BE$, as the point $N$ shall be between the points $Q$ and $B$, and the point $M$ between the points $P$ and $B$. Therefore no circle described to touch the involute at $E$, with a radius either greater or less than $BE$, will pass between the involute and the circle described with the radius $BE$; therefore this last circle is the oscillating circle of the involute at the point $E$.

In the course of the last demonstration it has been shown that, a circle which touches the involute will fall within that curve on both sides of the point of contact, if it be less than the oscillating circle; but, it will fall without the same curve on both sides of the point of contact, if it be greater than the oscillating circle.

The view that we have taken of the subject of curvature makes it necessary to prove that the rectilinear deflections from the common tangent are equal in the involute and its oscillating circle. By the rectilinear deflections of an arc from the tangent, we mean the perpendicular drawn from one extremity of the line upon the line that touches it at the other extremity. The proposition that we here propose to demonstrate, does not necessarily follow from any thing before proved: and it is too important to be left undemonstrated; for, on it, hinges the whole of the application of this subject to the doctrine of central forces. The proposition may be thus enunciated: If two arcs, $EP$ and $EQ$, (fig. 11.) equal in length, be taken on a curve and its oscillating circle, the limit of the ratio of the rectilinear deflections from the common tangent is the ratio of equality.” Let $BE$ be the radius of the oscillating circle, and $EL$ the common tangent of the curve and the circle: take $EP$ less, and $EQ$ greater, than $EB$; and with these radii let two circles be described touching $EL$ at $E$; then, as has been shown, part of the circle whose radius is $EP$, will fall within both the curve and the oscillating circle on either side of $E$, and part of the circle whose radius is $EQ$ will fall without both the same curves on either side of $E$: Take $EL$, upon the tangent, so small that a perpendicular, drawn from $L$ may cut the four curves in such a manner that the points $p$ and $q$, when it cuts the curve and the oscillating circle, may be between the points $m$ and $n$ when it cuts the two other circles. Then if the $EP$ and $E$ differ from $EB$, and the smaller $EL$ is taken, the nearer will the point $m$ and $n$ come together; and the nearer will the ratio of the chords of the arcs $mE$ and $nE$, or the ratio of the arcs $mE$ and $nE$ themselves, approach to the ratio of equality; and likewise, in the same circumstances, the nearer will the ratio of the deflections $LM$ and $LN$ approach to the ratio of equality; and, by taking $EP$ and $EQ$ nearer and nearer to $EB$, and $EL$ smaller and smaller, it is plain that both the ratios just mentioned will approach to the ratio of equality without any limit. But what is true of these ratios is much more true of the ratio of the arc $EP$ to the arc $EQ$, and of the ratio of $LP$ to $LQ$: because these two last ratios are always nearer to the ratio of equality than the two first ratios. Thus, then, as the arcs $EP$ and $EQ$ are diminished, their ratio, as well as the ratio of the deflections $LP$ and $LQ$, approach continually to the ratio of equality without any limit.

The effect of every central force is to deflect the moving body from the tangent: hence it follows, from this last proposition, that it is indifferent whether we suppose the momentary motion to be performed in any curve, or in the oscillating circle of that curve; because the deflections from the tangent are the same in both.

If the arc $EQ$ of the oscillating curve be so small, that it may be considered as equal to its chord; then, from the nature of the circle, $2EB \times LQ = EQ^2$, or $2EB \times LQ = EP^2$: therefore $EB = \frac{EP^2}{2LQ}$; that is, the radius of curvature is directly as the square of the arc, and inversely as the deflection from the tangent, where the arc is indefinitely diminished. Hence it likewise follows, that the curvature at two points of different curves, or at two different points of the same curve, are proportional to the deflections from the tangents in very small areas of equal length: for such deflections are inversely proportional to the radii of curvature at the two points.

The method of generating one curve by unrolling a thread from another curve, is certainly very ingenious: and it is well calculated to afford the imagination in forming clear and precise notions in a matter of no little subtlety. It demonstrates in the clearest manner this curious property of two curves, one of which cuts all the tangents of the other at right angles; viz. That the difference of two tangents bounded by the curves is precisely equal to the arc intercepted between the two points of contact. We shall now add some inferences from what has been demonstrated.

If any number of points, as $R$, $E$, $L$ (fig. 10.) be assumed in any curve, and if $RG$, $EB$, $DL$ be drawn perpendicular to the several tangents, these perpendiculars will be all tangents of the evolute of the proposed curve. The point $N$, in which two of the perpendiculars intersect, is always without the evolute, but is the nearer to it, the less is $EL$ the portion of the curve intercepted between the two perpendiculars: and if we suppose the arc $EL$ to be continually diminished, while one of the perpendiculars, as $EN$, retains its position, the point $N$, will continually approach to the point $B$, which will be the ultimate place of $N$. Thus, we see that, in any proposed curve, the positions of
of the centres of the osculating circles, and the lengths of their radii, may be deduced from the curve itself, without any consideration of the evolute: and this shows that, for any given curve, it is always possible to find a corresponding evolute.

Only one tangent can be drawn to the evolute from a point assumed in the curve: and hence, from such a point, only one perpendicular can be drawn to the involute. From a point on the convex side of the evolute, two tangents of that curve can be drawn (for the sake of simplicity we confine our attention to one branch of the evolute, having a continued curvature all turned one way); therefore, from such a point, two perpendiculars can be drawn to the involute. But, from a point on the concave side of the evolute, no tangent at all can be drawn: therefore, from such a point, no perpendicular can be drawn to the involute. Thus the evolute divides the whole plane which contains the involute into two distinct spaces: if a point be assumed in the one, two perpendiculars can be drawn from that point to the involute; if a point be assumed in the other, no perpendicular at all can be drawn; and if a point be assumed in the line of separation, then only one such perpendicular can be drawn.

We will now inquire how the length of the radius of the osculating circle, and the position of its centre, are to be determined for a curve whose equation is given. Let $DA$ (Fig. 12.) be the axis of the curve; $EH$, an ordinate, $=y$; $DH$, the corresponding abscissa, $=x$; $EB$, the radius of the osculating circle, $=R$; draw $BN$ parallel, and $DK$, perpendicular, to $DA$: let $ER$ be a small arc of the curve, and draw $RS$ perpendicular to $ER$. Suppose $x$ and $y$ to denote the corresponding fluxions of the abscissa and ordinate; then $\frac{\partial}{\partial x} = RS$ and $\frac{\partial}{\partial y} = ES$: put $\frac{\partial}{\partial x} = \frac{RS}{ES} = \tau$; and $\tau$ will be the tangent of the angle $RES$ (radius of curvature), or the tangent of the angle $EBN$, which is, by the principle of fluxions, parallel to $RE$; then the fluxion of that angle, or the inclination of the little arc that measures the angle $EBR$, is $\frac{\tau}{1 + \tau^2}$; and the length of the line arc, when the radius is $R$, is $R \times \frac{\tau}{1 + \tau^2}$; but, from the nature of the curve-circle, the subtended arc is equal to the little portion of the curve

$ER = \sqrt{x^2 + y^2} = \frac{x}{\tau} \sqrt{1 + \tau^2}$; therefore

$R \times \frac{\tau}{1 + \tau^2} = \frac{x}{\tau} \sqrt{1 + \tau^2}$; whence,

$R = \frac{x}{\tau} \times (1 + \tau^2)^{1/2}$; where $\tau = \frac{y}{x}$.

Again, the sine of the angle $EBN = \frac{\tau}{\sqrt{1 + \tau^2}}$ and the cosine of the same angle $= \frac{1}{\sqrt{1 + \tau^2}}$;

Hence $BN = EB \times \cos \theta = \frac{x}{\tau} \times (1 + \tau^2)$; and $EN = EB \times \sin \theta = \frac{x}{\tau} \times (1 + \tau^2)$;

Therefore,

$BK = EN - EH = -y + \frac{x}{\tau} \times (1 + \tau^2)$.

The symbol $\tau$ (which is the tangent of the angle that the radius of curvature makes with the axis of the curve) is purposely introduced, in the above expressions, to avoid second fluxions: because we are thus left at liberty to make any one of the variable quantities we please, to flow uniformly.

To illustrate these formulas, let the proposed curve be the conic parabola, of which the equation is, $4p = x^2$.

Then $y = 2p \frac{x}{R}$ and $\frac{\tau}{\sqrt{1 + \tau^2}} = \frac{1}{\tau}$; hence $\tau = \frac{x}{R}$ and $\frac{\tau}{\sqrt{1 + \tau^2}} = 2p$; therefore the radius of curvature $= \frac{x}{\tau}$.

$(1 + \tau^2)^{1/2} = 2p \times \left(1 + \frac{x}{R}\right)^{1/2}$. At the vertex of the curve, where $x = 0$, the radius of curvature is $2p = \frac{1}{\tau}$ of the principal parameter.

To investigate the nature of the evolute, we have $DK = x + \frac{x}{\tau} \times (1 + \tau^2) = x + 2p \times \left(1 + \frac{x}{R}\right)^{1/2}$; let the curve meet the axis of the parabola at $A$; then $DA = \text{radius of curvature at the vertex} = 2p$; therefore $A \cdot K = D \cdot K = 2p$.

Again, $BK = -y + \frac{x}{\tau} \times (1 + \tau^2) = -y + 2p \frac{x}{R}$; hence

$\frac{x}{\tau} \times \left(1 + \frac{x}{R}\right)^{1/2} = -y + 2p \frac{x}{R} \frac{1}{4} = \frac{R}{4} \frac{1}{R} \frac{1}{4} \frac{2x}{R} \frac{1}{R} = \frac{27}{4} \frac{1}{4} \frac{1}{R}$. Hence the equation of the curve is $u^3 = \frac{27}{4} \frac{1}{4} \frac{1}{R}$; which shows that the curve sought is a semi-cubical parabola.

The arc $AB$ of the evolute, according to what has been taught, is equal to $BE - AD$, or in symbols, to $2p \times \left(1 + \frac{x}{R}\right)^{1/2} - 2p$. Thus it appears, that any proposed arc of the semi-cubical parabola may be exactly rectified. The investigation we have here given is due to Mr. Huyghens; but this curious discovery was first made by Mr. Wil. Neil, an Englishman and a pupil of Dr. Wallis, and from him the curve to which it relates is sometimes called Pa- rabola Neilliana. The same discovery seems also to have been made, very little later in point of time, and without any knowledge of what had been done in England, by Van Heuraet, a Dutch mathematician.

Let there be proposed the equation $p = x^n - m^n$ which comprehends all curves of the parabolic kind: then $y = \frac{m}{m - n} x^n$ and $\frac{\tau}{\sqrt{1 + \tau^2}} = \frac{m}{m - n} \frac{m - n}{m} \frac{m - n}{m} = \frac{1}{\tau}$; hence
CURVATURE.

This the: a the' — is fin. and neque' "X not' "draw different It that for- the fubjedt infinitely conltantly form in- equation this cubical curve, the treating degrees furnifhts is nearer the given curve, or per- curvature at the point of laying which curves it is nearer, and curvature in the nature of such curves is mostly commonly defined by assigning the relation that subsists between the radius vector AM and the angle which it makes with a line A B given by position. Put AM = ε, and let the arc which measures the little angle MAN on the circle whole radius is \( t = \varphi \); then

\[ N R = \epsilon \varphi, \quad N R = \varphi, \quad \text{and} \quad M N = \sqrt{\epsilon^2 + \varphi^2}; \]

It is plain that the triangles M N R and M A P are equiangular; hence M P (for which we shall write \( p \)) is \[ A M \times M R = \frac{\epsilon^2 \varphi}{M N}; \]

again, because A M = M O = \[ + O A^2 = 2 M O \times O P \text{ and } A N = N O + A O = 2 N O \times O Q \text{; therefore, since } M O = O N \text{ and } M A = 2 M O \times O P \times O Q = 2 M O \times N Q \times M P; \text{ that is, in symbols, writing } R \text{ for } M O, 2 \epsilon = 2 \varphi \text{; } \]

Hence \[ R = \frac{\epsilon \varphi}{p}, \text{ a formula of easy application.} \]

The nature of the curve is known from the values of the radius vector A O, and the perpendicular upon the tangent A P. Now \( A P = \sqrt{\epsilon^2 - p^2}; \) and \( A O = \sqrt{M O^2 - 2 M O \times M P + M A^2} = \sqrt{\frac{\epsilon^2 \varphi^2}{p^2} - 2 \frac{\epsilon^2 + \varphi^2}{p} + 1}. \]

In the logarithmic spiral, all the radii vectors cut the curve in the same angle: let this confluent angle be denoted by \( m \); then, in this curve, \( \frac{p}{\epsilon} = \text{fin. m}, \) and \( \frac{\epsilon}{\text{fin. } m}; \) whence \( A O = \epsilon \times \sqrt{\frac{1}{\text{fin. } m} - 1} = \varphi \times \frac{\epsilon \times \text{col. m.}}{\text{fin. } m}; \) therefore M A O is a right-angled triangle and the angle A O M, which the radius vector of the evolute makes with the curve of the evolute, is constantly equal to the given angle \( m \), or to the angle which the radius vector of the involute makes with the curve of the involute. Thus it appears that, in the instance of the logarithmic spiral, the evolute is not only similar to the involute, but it is precisely the very same curve in a different position. James Bernoulli first discovered this curious property; and, admiring the confluent reproduction of the same curve by repeated evolutions, he defined that a logarithmic spiral should be engraved on his tomb-stone, with the inscription sedem mutata refugii.

Curvature, Variation of. See Variation.

Curvature, Double, is used for the curvature of a line, all the parts of which are not situated in the same plane.

CURUCHE, in Geography, a town of Portugal, in the province
province of Alenteja, district of Aviz, with a population of 2400 inhabitants.

CURUCUI, in Ornithology, a name given to several species of *Trogon*; which he.

CURVE, in Geometry. The original idea, from which all our notions of geometrical magnitudes are derived, is that of a solid. From the idea of a solid, we get the notion of a surface, which is the boundary of that solid; and in like manner, from the idea of a surface, we derive the notion of a line, which is the boundary of a surface, and possesses length only without breadth or thickness.

**Straight Line.**

The simplest sorts of lines are those which are called straight, or right, lines. The idea of a straight line is of so simple and uncompounded a nature, that it appears difficult, if not impossible, to make it clearer by any description or definition. It will certainly not be maintained that Euclid has succeeded in his attempt to define a straight line, when he says that it is such a line as "lies evenly between its extreme points." For the phrase here used does not convey a more clear and precise meaning than the word *straight*, which it is intended to define.

We apprehend that the most philosophical course to pursue in this case is to omit defining what cannot be made clearer by definition; and fairly to take it for granted that whoever understands the English language must have a distinct idea of the meaning which the word *straight* is intended to convey. All the purposes of geometry will be answered by stating it as an axiom, or self-evident inference from the idea of a straight line, that particular property which is selected to be the foundation of scientific reasoning. And this is in effect what Euclid has done; for none of his conclusions are drawn from his definition, but they all hinge on the 10th axiom, which is an inference obviously flowing from the notion we have of straight lines.

**Curve Line.**

It is no less difficult to give a direct definition of a curve line than of a straight line. The ancient geometers seem to have extended the appellation of a curve line (σχηματικός) not only to lines, such as the circle and the conic sections, that have a regular and continued curvature, but also to lines made up of several contiguous straight lines in different directions; and even to mixed lines composed partly of straight, and partly of curve lines. We shall exclude such singular combinations from the classes of curves by defining a curve line to be "that which is neither a straight line, nor composed of straight lines."

The straight line and the circle, the simplest of all the curves, are the subjects of the plane geometry. Next: after the plane geometry, the ancient geometers ranked the theory of the conic sections, of which we have treated in its proper place. These two branches comprehend nearly the whole of the ancient geometry; a very few curves, devoted for the solution of particular problems, and forming no connected theory, do not deserve to be distinguished as a separate branch. The most noted of the curves here alluded to are the following: the spiral of Archimedes; the conchoid of Nicomedes; the cissoid of Diocles; and the quadratrix of Dinostratus.

It may not be amiss to notice in this place a classification of lines laid down by the ancient mathematicians in their treatises on geometrical loci. The most simple of the local propositions, comprehending such as related to the circle, they called *loci plani*; the more complex propositions, depending on the conic sections, they termed *loci solidi*; and another local propositions, which they could not reduce to one or other of these two classes, they comprehended under the generic name of *loci linearis*, in the investigation of which they made no advances. Pappus, lib. vi.

The influence of the "Loci ad rectas" will serve to illustrate what is here said. In this locus, a certain number of straight lines, as four or six, are supposed to be given by position; it is supposed too that straight lines are drawn from a point to cut each of the lines given by position in a given angle; further, in the case of four lines given by position, the ratio of the rectangle contained by two of the lines drawn from the point to cut the lines given by position, to the rectangle contained by the other two, is to be a given ratio; and, in the case of six lines given by position, the ratio of the solid contained by three of the lines drawn from the point to cut the lines given by position, to the solid contained by the other three, is to be a given ratio; then the question is to investigate from these data the nature of the line that the point will touch. The case of four right lines given by position (*locus ad quatuor rectas*) fell within the compass of the ancient geometry, and it was shown in general to be a *locus solidus*. But, in particular cases of the data, it might become a *locus planus*; that is, in each case, the point touched a conic section, and in particular circumstances, a circle, or a right line. But, in the case of six right lines given by position (*locus ad sex rectas*), the investigation surpassed the limits of the ancient geometry; and the proposition fell into the unknown class of *loci linearis*.

It is not till the time of Descartes that the general properties of curve lines can be considered as forming a separate branch of the mathematical sciences. This celebrated philosopher and mathematician first pointed out the application of algebra to geometry; and, by this happy thought, laid the foundation of the great modern improvements in analysis. For it requires only a superficial view of the history of the mathematics to show that the chief modern discoveries have originated from researches into the properties of curve lines.

Let A B (Analysis, Plate VI. fig. 1.) be a right line given by position, and A a given point in it; from A draw AC making a given angle with A B, and let PM, drawn from the point P, be parallel to AC. Then the position of the point P will be perfectly ascertained when we shall have determined these four things: viz. the length of the line A M; the length of the line PM; whether A M lies on the right or the left of the point A; and whether P M is above or below the line A B.

A mathematical curve line may be considered as a series of points, all of which are possessed of some common property. What is called the equation of the curve is merely the algebraical expression of the relation that must necessarily subsist between the lengths of the lines A M and MP, in order that the point P may have the property which is characteristic of the curve line. This equation puts it in our power to find the length of one of the lines, as M P, when the length of the other, A M, is given; and, the several points of the curve, that correspond to any proposed portions of the fixed line A B, are by this means determined, as far as the two first of the conditions enumerated above are concerned.

The line A B is called the axis of the abscissas.
The portion of the axis, $A\,M$, is called an $abscissa$; and the fixed point $A$, is called the origin of the $abscissas$. The line $PM$, parallel to $AC$, is called an $ordinate$ of the curve. The ordinates are underflood to be at right angles to the axis, unless the contrary be expressly mentioned.

A point of a curve is sometimes determined by two lines, as $PM$ and $PN$, drawn from it parallel to two axes, $AB$ and $AC$; in this case, $PM$ and $PN$ are called co-ordinates; and the point $A$, where the axes cross, is called the origin of the co-ordinates.

We shall denote the $abscissa$, $A\,M$, by the algebraical symbol $x$, and the corresponding $ordinate$ by the symbol $y$.

The next thing to be considered regards the position of the $abscissas$ in respect of the point $A$; and the position of the ordinates in respect of the axis $AB$. On this head the rules of analysis are clear and explicit; and there is no doubt that they are just and accurate. But although these rules suggested themselves readily enough in the application of algebra to geometry, and there has been no difference of opinion about them, yet no author, that we know of, has succeeded in deducing them, in a perspicuous manner, from first principles. The doctrine of negative quantities comes into play here; a doctrine concerning which much has been written that is vague, much that is futile, nothing that is very clear and satisfactory. The author that appears to have approached nearest to the unravelling of this part of the theory of curve lines is M. Carnot, in his "Geometrie de Position," (See particularly the Discours Preliminaire); to which treatise we refer such of our readers as are pleased with digressions of this kind.

Adopting the received doctrine of positive and negative quantities, as laid down by the writers on algebra; all the positive $abscissas$ are to be let off on one side of the point $A$, Fig. 1, as on the right-hand side; then it will follow of course, that the negative $abscissas$, which are of an opposite nature to the positive ones, must be let off on the left-hand side of the same point. In like manner, all the positive ordinates, whether they correspond to positive $abscissas$ or to negative ones, are to be drawn on one side of the line $AB$, as on the upper side of it: and, then, all the negative ordinates, whether they correspond to positive $abscissas$ or negative ones, must necessarily be drawn below the line $AB$. Thus a positive ordinate, that corresponds to a positive $abscissa$, will be placed above the line $AB$, on the right hand of the point $A$, as $MP$; and a negative ordinate, that corresponds to such an abscissa, will be placed below the line $AB$, on the right hand of the point $A$, as $MP'$; and, again, a positive ordinate, that corresponds to a negative $abscissa$, will be placed on the left-hand of the point $A$, above the line $AP$, as $mp$; and a negative ordinate, that corresponds to such an $abscissa$, will be placed on the left-hand of the point $A$, below the line $AB$, as $mp'$. Thus the equation of the curve, which expresses the relation of the lengths of the $abscissas$ and the corresponding ordinates, is, at the same time, sufficient, with the help of the directions just laid down, to fix the relative positions of the same lines; because the rules for resolving algebraic equations not only investigate the numerical values of the unknown quantities, but likewise determine the signs that must be prefixed to these values.

It is to be remarked that what are called impossible, or imaginary, roots in algebra, have no place in the theory of curve lines. These mysterious quantities have no correspondent expression in geometry. When a known value, positive or negative, is given to the $abscissa$, then every real value of the ordinate deduced from thence, whether positive or negative, will determine a point in the curve by being placed in its proper position; but the impossible values of the ordinate only mark that we are past the limits of the curve, and that we have been seeking for it, where it is not to be found.

**Figure of Curve Lines.**

The connection between the algebraic quantities of the $abscissas$ and ordinates, and their different positions, being a capital point in the geometry of curve lines, we shall endeavour to illustrate it by a few examples.

1. **Fig. 2.** Let the equation of the curve be $px = y^2$. The general value of $y$, in this equation, is $\pm \sqrt{px}$. And here we see that there are no ordinates corresponding to the negative $abscissas$; for, when $x$ is made negative, the value of $y$ becomes impossible; there will, then, be no part of the curve on the negative side of the origin of the $abscissas$. It appears also that, for every positive $abscissa$, there will be two ordinates, both equal in length, the one positive, and the other negative. Hence, it is plain, that this curve will be one continuous line, having two legs uniting in the origin of the $abscissas$, extending indefinitely on both sides of the positive part of the axis, and receding coynangly from it.

This curve is no other than a conic parabola, of which $p$ is the principal parameter. The same observations will equally apply to all curves included in the general equation $px^2 = y^2$, when $a$ is an odd, and $m$ an even number, and $m$ is greater than $m$; such as, $p \cdot x = y^4$, $p \cdot x^2 = y^6$, &c.

For the greater precision it may be proper to remark, that a curve, whose equation is $p \cdot x^m = y^n$, will be concave, or convex to the axis, according as $m$ is greater or less than $n$. When $m$ and $n$ are equal, the equation belongs to a straight line.

2. **Fig. 3.** Let the equation of the curve be $p \cdot x = y^2$; the general value of $y$ is $\sqrt{px}$, and it appears, from this expression of the value of $y$, that there is only one positive ordinate for every positive $abscissa$, and only one negative ordinate for every negative $abscissa$. Therefore this curve will consist of two branches, uniting in the origin of the $abscissas$, and extending indefinitely in opposite directions; the one above the axis of the $abscissas$, and the other below it.

The same will be the case with every curve included in the general equation $p \cdot x^m = y^n$, when $m$ and $n$ are both odd numbers.

**Point of contrary Flexure.**

It is plain that curves of this kind have their curvatures turned in opposite directions; for if the concavity, or convexity, of one branch be toward the right, the concavity, or convexity of the other branch, will be toward the left. In this case, the curve is said to undergo a contrary flexure, and the point, where the change takes place, is called a point of contrary flexure.

3. **Fig. 4.** Let the curve be expressed by the equation $p \cdot x^m = y^4$. The general value of $y$ is $\sqrt[4]{p \cdot x^m}$. In this instance the ordinates are all positive whether $x$ be positive or negative; and thus there is no part of the curve below the axis of the $abscissas$. This curve will consist of two branches diverging from the origin of the $abscissas$, and both on the same side of the axis.

A like figure belongs to all curves included in the equation $p \cdot x^m = y^4$, &c.
tion $n^2 = y^2$, when $n$ is an even, and $m$ an odd number, and $m$ is greater than $n$.

**Cuspid.**

When a curve is reflected back, as happens in the present instance at the origin of the abscissas, the point where the change in the direction of the curve takes place is called a cuspid, or point of reflection. The marquis de L'Hopital distinguishes points of reflection into two kinds: the first kind is when the convexities of the curve, before and after the cuspid, are turned toward each other, as in the instances we have just been considering; the second kind is when the convexity of the part of the curve on one side of the cuspid is turned toward the convexity of the part on the other side of the cuspid. The second kind of cuspid was disputed by some mathematicians; but instances where it actually takes place were produced by D'Alembert, and it must now be admitted. The equation $(a' y = x^2) = \frac{x}{b}$ is an instance of a curve having a cuspid of the second kind at the origin of the abscissas.

The several cases which we have gone through define particular notice; and indeed they ought to be considered as elementary propositions in the theory of curve lines. For, by proper transformations, they will enable us to examine the nature of the curvature at any proposed point in any curve. To do this, we must make the point of the curve the origin of the abscissas, and take, for the axis, the line drawn perpendicular to the tangent of the curve; then the relation that subsists between the abscissas and the ordinates, when both are very small, or in a nascent state, will, for the most part, coincide with one or other of the cases above enumerated; and thus we shall discover whether the curvature is continued without interruption, or a contrary flexure, or a cuspid, takes place at the proposed point.

**Conchoid.**

4. As an instance of a more complex figure, let there be proposed the conchoid (fig. 6), of the ancients, of which the equation is, $x^2 = (a^2 - x^2) (b - x^2)$. The general value of the ordinate is, $y = \pm \frac{\sqrt{a^2 - x^2}}{x} \times \frac{b - x}{x}$. Here, when $x = a$, the ordinate is infinite great; therefore, $A$ is drawn through the origin of the abscissas parallel to the ordinates, that line will no where meet the curve. But, for every positive value of $x$ how small forever, it is plain that there correspond two equal ordinates, one positive and the other negative; therefore the curve will consist of two equal branches, one above and the other below the axis of the abscissas, which approach nearer to the line $A$ than any assignable distance, but no where meet it. A right line, such as $A$, to which a curve continually approaches but never meets, is called an asymptote.

The points, in which a curve will cut the axis of the abscissas, will be determined by putting $y = b$, and seeking the values of $x$ in the resulting equation. In the present instance, when $y = b$, $x^2 = (a^2 - x^2) (b - x^2)$, whence $x = \pm \frac{b}{2}$, and $x = 0$; therefore, supposing $a$ to be greater than $b$, make $A$ and $B$ each equal to $a$, and $B = b$; and $B, D, E, F$, will be the points in which the curve will meet the axis. It is plain that the two branches of the curve both pass through the point $B$, and meet again at the point $D$, beyond which there is no part of the curve on the positive side of $A$; for the ordinates change their signs when $x$, from being less than $b$, becomes greater than $b$; and they are impossible when $x$ is taken greater than $a$. To examine the figure of the curve on the negative side of the origin of the abscissas, write $+x$ for $-x$ in the expression for $y$, then

$$y = \pm \frac{\sqrt{a^2 - x^2}}{x} \times \frac{b + x}{x}$$

whence it is easy to infer that the curve will consist of two infinite branches, united at $E$, and extending on opposite sides of the axis along the same asymptote as before.

The part of the curve between $B$ and $D$ is called a nodus.

A point, such as $B$, where two branches of a curve intersect, is called a punctum duplex. In like manner, when three branches of a curve pass through one and the same point, that is called a punctum triplex. When a punctum triplex takes place, there is always a certain number of equal values of $y$ corresponding to one value of $x$: but the converse must not always be inferred. Thus, when two points of section coalesce into one point of contact, there is no punctum duplex: but if the equality of the ordinates still remains, however the equation of the curve be transformed, or to whatever axis the ordinates be referred, then we may conclude with certainty that there is a punctum triplex, according to the number of equal ordinates.

When $a = b$, then the points $B$ and $D$ (fig. 7.) come together, the nodus disappears, and there is a cuspid at $B$.

When $a$ is less than $b$, the curvature at $D$ (fig. 8.) is continued without interruption, and there is neither a nodus nor a cuspid.

5. Let there be now proposed the curve whole equation is $a x^2 = (x + b) (x^2 - a^2)$. The general expression of the ordinate is $y = \pm \frac{\sqrt{(x + b)} (x^2 - a^2)}{\sqrt{a}}$. The values of $x$, corresponding to $y = 0$, are $+ a$, $- a$, and $b$ (fig. 9.): therefore make $A, B, C$, each equal to $a$, and $A, D, B = b$, (which is supposed to be greater than $a$): then the curve will cut the axis at the points $B, C, D$. There are no ordinates corresponding to such abscissas as are less than $a$: therefore there is no part of the curve between $A$ and $C$, nor between $A$ and $B$. When $x$ is positive and greater than $a$, the corresponding ordinates will increase as $x$ increases; and the curve, on the positive side of $A$, will consist of two infinite legs uniting at $B$. When $x$ is negative, then

$$y = \pm \frac{\sqrt{(b - x)} (x^2 - a^2)}{\sqrt{a}}$$

whence it appears that there will be an oval, or a curve enclosing space, corresponding to the part of the axis between $C$ and $D$.

An oval, such as that just mentioned, which is placed apart from the other branches of the curve, is called an ovale conjunctum.

As $b$ approaches nearer to $a$ in value, the part of the axis $C, D$, to which the oval corresponds, becomes less and less; and when $b$ is exactly equal to $a$ (fig. 10.), the oval contracts into a single point; which is, nevertheless, to be reckoned a part of the whole curve belonging to the equation $a y^2 = (x + a) (x^2 - a^2)$. A single point of this sort, which, though it is detached from the other parts of the curve, yet satisfies the equation of the curve, is called a punctum conjugatum.

**Classification of Lines.**

In the course of the examples that have been adduced, the most remarkable circumstances respecting the figure of curve
curve lines have been briefly noticed. To the reader, who is pleased with this speculation, and wishes to pursue it further, we recommend the perusal of Sir Isaac Newton's "Enumeratio Linearum Tertii Ordinis." When the scope of this doctrine is considered, it is plain that a curve line may be employed to exhibit the relative magnitudes of any two indeterminate quantities, which depend upon one another in such a manner, that, when any value of the one is assumed, the corresponding values of the other may be thence computed. For this purpose, the given values of one of the indeterminate quantities must be made the abscissas of the curve; and then the corresponding values of the other will become the ordinates. Thus the number of curve lines is infinitely great. Hence it is necessary to introduce order into the study of this subject, by proper classification.

The class of geometrical lines comprehends all those in which the relation between the abscissas and the corresponding ordinates is expressed by a finite algebraic equation: such are all the curves in the preceding examples. This class comprehends the straight line.

Mechanical Curves.

The mechanical curve lines are all those in which the relation of the abscissas and ordinates cannot be expressed by a finite algebraic equation. The most remarkable quantities, which cannot be algebraically expressed in finite terms, are the lengths of circular arcs and logarithms: and it is on these quantities that the most noted of the mechanical curves depend. The cycloid and the spiral of Archimedes are instances of mechanical curves derived from the circle: the logarithmic curve is an instance of one derived from logarithms; and the logarithmic spiral is an instance of one depending equally upon circular lines and logarithms. It has not been found requisite to subdivide the mechanical curves into subordinate classes.

Algebraic and Transcendent.

Many authors use the words algebraic and transcendent, in place of geometrical and mechanical, introduced by Des Cartes: and, when it is considered that the distinction signifies refers solely to the nature of the equations which characterize the curves, it must be allowed that the former terms seem to be more appropriate than the latter. Leibnitz gave the name of curve transcendentes to a class which he considered as holding an intermediate rank between the algebraical and transcendent classes. This class comprehended such as had furd exponents in their equations: as, for instance, \( y = x^2 \).

Orders of Algebraic Lines.

The class of algebraic lines, which is, on account of their mutual affinity, are alone capable of general distinction, are subdivided into orders according to the degrees of their equations. It hardly requires to be remarked, that the degree of any term of an equation depends only on the exponents of the indeterminate quantities, and not at all upon the invariable or given coefficients; but it must be carefully observed, that the degrees of such terms, as involve the two indeterminate quantities, are to be reckoned by the sums of the exponents of both. Thus all the terms, \( x^2, xy, y^2 \), are homogeneous, and equally of the second degree; all those, \( x^3, x^2y, xy^2, y^3 \), are of the third degree; all those, \( x^4, x^3y, x^2y^2, xy^3, y^4 \), are of the fourth degree. When the equation of a line is freed from rational fractions, and from surds, then its order, or genus, is to be reckoned by the exponent of the homogeneous terms of the highest degree contained in it.

Complete Equation.

The equation of a line is complete when it contains all the homogeneous terms that characterize its order, and all those of all the inferior degrees. Thus the complete equations of the first, second, and third orders of lines are as follow:

1st order, \( ax + by + e = 0 \).
2nd order, \( ax^2 + bxy + cy^2 + dx + ey + f = 0 \).
3rd order, \( ax^3 + bx^2y + cxy^2 + dxy + ey^3 + fxy + gy^3 + bx + ky + l = 0 \).

These equations plainly comprehend all the possible varieties of one order; and what can be proved to be true of a line expressed by a complete equation, must be admitted to be a general property of all lines of that order. This distribution of lines comprehends the straight line, which forms the first order. Some authors, excluding the straight line, give the name of curves of the first order to the same class which have been ranked as lines of the second order; and, in like manner, they call curves of the second order what have been ranked as lines of the third order.

Number of Terms of a complete Equation.

It is important to know the number of terms that an equation will contain when it is complete: because this alone is sufficient to determine the number of points through which it is possible to describe a curve line of any proposed order. Now the number of homogeneous terms of the \( n \)th degree is plainly \( n + 1 \); and because a complete equation of the \( n \)th order contains all the homogeneous terms of all the degrees that can enter into it, therefore the number of the terms must be equal to the sum of the arithmetical series, \( (n + 1) + n + (n - 1) + (n - 2) \ldots \ldots \ldots + 1 \); which sum is equal to \( (n + 1) \times \frac{n^2 + 3n}{2} \). The number of the coefficients of a complete equation is apparently the same as the number of the terms; but it is to be observed, that one of the coefficients may be made to disappear by division; so that, in reality, the number of arbitrary coefficients is one less than the number of the terms, and it is therefore equal to \( \frac{n^2 + 3n}{2} \). And if as many points be proposed as there are arbitrary coefficients in a complete equation of any order, then the curve of the same order that will pass through all these points will be determined. For, let any line at pleasure be drawn for an axis, and let any point in it be assumed for the origin of the abscissas, and let ordinates be drawn to this axis in any given angle; then there will be as many known abscissas, with a known ordinate corresponding to each, as there are given points; and these, being respectively substituted in the equation of the curve, will furnish an equal number of equations, in which every thing is known, excepting the coefficients of the several terms. Therefore, by proceeding according to the rules for resolving simple equations in algebra, the several coefficients will be found in terms of the known abscissas and ordinates: and hence the equation of the curve sought will be completely determined. In this manner it is proved that a
line of the second order may be described through five points; and one of the third order through nine points.

Change of the Axis.

When the equation of a curve is found for any one axis, it may be transformed into another equation, in which the independent quantities shall denote the abscissas and ordinates of a new axis drawn at pleasure. As this is an operation continually wanted in the theory of curve lines, it must not be passed over without explanation. Let P, (fig. 11) be a point, the position of which is determined by the abscissa $A\ M=x$, and the ordinate $M\ P=y$; and let $A\ M'=x'$, and $P\ M'=u$, be the abscissa and ordinate of the same point referred to a new axis $A\ C$, it is required to express the first abscissa and ordinate, $x$ and $y$, by means of the new abscissa and ordinate, $x'$ and $u$. Draw $A\ N$ and $M\ P' \parallel \ A\ M$; and $A\ B$ and $M\ K \parallel \ P\ M$; put $A\ B=b$, and $A\ B'=k$: let the angle $A\ M\ P$ in which the first ordinate cuts its axis be $=m$, and the angle $M\ P'\ M'$, contained between the first and the new ordinates be $=n$, and the angle $A\ M\ N$, between the two axes be $=v$; then, observing that the fine of the angle $A\ M\ P$ is $\sin. (m+n)$, and the fine of the angle $A\ M\ K=\sin. (m+v)$, the following determinations are readily derived from the theorem in trigonometry that the sides of a triangle are proportional to the angles opposite to them, viz.

\[
P\ H = \frac{\sin. (m+n)}{\sin. m} \times u
\]

\[
M\ H = \frac{\sin. v}{\sin. n} \times z
\]

\[
A\ K = \frac{\sin. (m+v)}{\sin. n} \times z
\]

\[
M\ H' = \frac{\sin. v}{\sin. m} \times u
\]

Hence, because $A\ M = A\ B + A\ B' + K\ N$, and $P\ M = P\ H + H\ N + A\ B'$, we have in symbols,

\[
x = \frac{\sin. (m+n)}{\sin. m} \times z + \frac{\sin. n}{\sin. m} \times u + b
\]

\[
y = \frac{\sin. (m+n)}{\sin. m} \times u + \frac{\sin. v}{\sin. m} \times z + k
\]

If the ordinate $P\ M'$ is to cut its axis at right angles, the values of $x$ and $y$ are $\frac{\sin. (m+v)}{\sin. m} \times z + \frac{\sin. v}{\sin. m} \times u + b$

\[
y = \frac{\sin. (m+v)}{\sin. m} \times u + \frac{\sin. v}{\sin. m} \times z + k
\]

And, if both the first and the new ordinates are perpendicular to their axes, then

\[
x = \frac{\sin. v}{\sin. m} \times z - \sin. v \times u + b
\]

\[
y = \frac{\sin. v}{\sin. m} \times u + \sin. v \times z + k
\]

If these values of $x$ and $y$ be substituted for them in the equation of any curve, the result will be a new equation of the same curve referred to a new axis drawn at pleasure. But however the axis of the curve may be changed in this way, yet it is plain that the order of the curve will remain unalterably the same. The two last expressions for $x$ and $y$ are the most useful; they contain three arbitrary quantities, viz. $\sin. v$, $b$, and $k$, which may be determined so as to suit the purpose in hand.

Subordinate Species.

We are now to consider the complete equations of the second-order, with the view of classing the subordinates contained in each.

First Order of Lines.

The complete equation of the first order of lines is $a\ x + b\ y = c$; which, by changing the coefficients may be brought to this form, $y = \frac{a}{b} x + c$. Here there is plainly no variety; for whatever changes are made in the coefficients or the signs, the locus of the equation is equally in all cases a right line. It is thus constructed. Fig. 12. From the origin of the abscissas $A\ B$, draw $A\ B$ parallel to the ordinates, and equal to $c$; draw $B\ N$ parallel to the axis, take $B\ N = a$, and make $u n$ parallel to the ordinates, and $= b$; then the line drawn through $B$ and $n$ is the locus of the equation, as is manifest.

Second Order of Lines.

The second order of lines will require more discussion. The complete equation, when the arbitrary coefficients only are retained, is

\[
y^2 + 2\ a\ x\ y + b\ x^2 + 2\ c\ y + 2\ d\ x + e = 0
\]

This equation may be thus written,

\[
(y + a\ x + c)^2 = (a^2 - b)\ x^2 + 2\ (a\ c - d)\ x + e - c
\]

And there are three cases to be distinguished; when $a^2 - b$ is a positive quantity; when it is negative; and when it is equal to nothing.

Hyperbola.

1. Let $a^2 - b$ be positive, and $= p^2$; and let $p^2 \ a = ac - d$: then the equation $(\lambda)$ becomes, by substitution, $y = a\ x + c = p^2 \ (x + q)^2 = e^2 - e^2 p^2 q^2$; let the left-hand side of this equation be resolved into its factors, and, for the sake of brevity, put $m = p + a, n = p - a, r = p \ q + c, s = p \ q - e$; and the result will be $(y + m\ x + r) \times (y - n\ x - s) = e^2 - e^2 p^2 q^2$, an equation which may be thus constructed: Fig. 13 and 14. Draw $c\ e\ d$ parallel to the ordinate $P\ M$, and make $c\ d = n\ x + A\ d$, and $c\ e = m\ x + A\ d$; and draw the lines $A\ e\ Q$, and $A\ e\ R$; make $A\ H$ parallel to the ordinate $P\ M$, and $A\ H\ M$, also $A\ R = r$, and draw $H\ L$ and $K\ N$, intersecting in $O$, parallel to $A\ Q$, $A\ R$. Then $P\ N = P\ M + M\ R + R\ N = y + m\ x + r$, and $P\ L = P\ M - M\ Q - Q\ L = y - n\ x - s$; therefore $P\ L = P' N = e^2 - e^2 p^2 q^2$, whence it is manifested that the curve, which is the locus of the points $P$, is a conic hyperbola, of which $O\ L$ and $O\ N$ are the asymptotes. When $e^2 - e^2 p^2 q^2$ is a positive quantity, the point $P$ will be without the angle $L\ ON$: and, in this case, if $O\ S$ be drawn parallel to $P\ M$, and $e^2 - e^2 p^2 q^2$; then $P$ will be a point in the hyperbola. But when $e^2 - e^2 p^2 q^2$ is a negative quantity, then $P$ will be within the angle $L\ ON$; and if $F$ be interposed between $O\ L$ and $O\ N$, so as to be parallel to $P\ M$, and $= 2 \ e^2 p^2 q^2 + e^2 - e^2 q^2$; then $S$, the middle of $F\ G$, will be a point in the hyperbola. Thus, in every case, the general equation, when $a^2 - b$ is positive, belongs to a conic hyperbola, which passes through a given point, and has two given lines for its asymptotes.

The complete locus, in the former case, consists of the two opposite hyperbolas, lying in the angles, adjacent to the angle $L\ ON$; and, in the latter case, it consists of the two opposite hyperbolas contained in the angle $L\ ON$, and the angle opposite to it.

If $e^2 - e^2 p^2 q^2 = 0$, the equation resolves itself into these two, $y + m\ x + r = 0$, and $y - u\ x - r = 0$; which are the
the equations that determine the position of the right lines O I. and O N.

Under this head are comprehended all cases of the general equation where either \( y^2 \) or \( x^2 \), or both of them, are

**Ellipses.**

11. When \( a^2 - b \) is a negative quantity; put \( p^2 = -a^2 \), and the equation (A) will become \((y + a x + c)^2 = -e^2 - p^2 q^2 \). Because the left-hand side of this equation is essentially positive, perforce the condition is that the equation is a cottage, and cannot be constructed at all. 

Fig. 15. draw \( de \) parallel to the ordinate \( PM \), and make \( a : b = a d : b e \), and draw \( A R \) parallel to \( PM \), and \( c : e \), and draw \( RO \) parallel to \( AQ \). take \( A K = q \), and draw \( KL \) parallel to \( AR \). Then \( PO = PM + MH + HO = y + a x + c \); also \( KM = AM + AK = x + q = \frac{Ad}{Ae} \times LO \); therefore \( PO^2 + A^d t^\frac{Ad}{Ae} \times LO \); 

\( p^2 \times L^2 = e^2 - e^2 - p^2 q^2 \); make \( LN = \sqrt{e^2 - e^2 - p^2 q^2} \); and \( LG = \frac{Ad}{Ae} \times LN \); then \( PO^2 + L^2 \times LO \) is \( L^2 \); whence it is manifest that the locus of the point \( p \) is a conic ellipse, of which the lines \( LG \) and \( LN \), given in magnitude and position, are two conjugate semi-diameters.

**Parabola.**

11. The remaining case to be considered is, when \( a^2 - b = o \); the equation (A) becomes \( (y + a x + c)^2 = -2 (a d - d) \times e = -e^2 + e \); and, by putting \( e = a d - d \), and \( 4 \times e = e^2 - e \), it is changed into \( (y + a x + c)^2 = 4 (x + r) \). Draw a equation belonging to a conic parabola. 

Fig. 16. draw \( de \) and \( AR \) parallel to \( PM \), and make \( d : e = a : b \), \( AR = c \), and \( AK = r \); draw \( RO \) parallel to \( A e \), and \( KL \) parallel to \( PM \); then \( PO = y + a x + c \), and \( KM = x + r = \frac{Ad}{Ae} \times LO \); therefore \( PO^2 = \frac{Ad}{Ae} q \times LO \); whence the locus of the point \( p \) is a conic parabola, having \( LO \) for one of its diameters, and the parameter of that diameter \( = 4 \times \frac{Ad}{Ae} \times q \).

As every possible case of the complete equation of lines of the second order falls under one or other of the three heads we have separately examined, it follows that the three curves, known by the name of the conic sections, comprehend all the varieties of this order of lines. The same curves which the Greek geometers, nearly two thousand years before the time of Des Cartes, derived from the sections of a solid cone, present themselves here, under a new aspect; and their mutual affinity, as well as their characteristical differences, are as strongly marked by the varied designation of the same algebraic expression, as they are by the changes of position in a geometrical construction. It may be proper to observe that the nature of the highest member of the equation, and the species of the curve to which that equation belongs, both depend on the same quantity \( a^2 - b \): for when \( a^2 - b \) is positive, the highest member of the equation, or \( y^2 + 2 a x y + 5 x^2 \), has two real binomial factors; and the curve to which the equation, in this case belongs, is the hyperbola; when \( a^2 - b \) is positive, the highest member has no real binomial factors; and the curve to which it belongs is the ellipse; and when \( a^2 - b = o \), the highest member is a complete figure, or has two equal binomial factors; and the curve is the parabola.

**Third Order of Lines.**

Lines of the third order are divided by Sir Isaac Newton, into four principal divisions, or genera; and these are again subdivided into no less than seventy-two different species. The purpose of classification is, in some measure, defeated, when the number of subordinate species becomes inexpressively great. It will not be expected that we can enter into any detail concerning a subject occupying so large a field, and which, after all, must be allowed to be more curious than useful. The enumeration of the illustrious author is founded on the varieties of figure that result from all the possible cases of the general equation. This principle of classification is certainly not a little arbitrary. Perhaps there is less reason to be surprised that a few cases have been omitted, than that so complete an enumeration was made with so unfurled a guide. Mr. Stirling, who has commented on the treatise of Sir Isaac, has added four species to those of his author: and who will say that the enumeration is at last complete?

Some mathematicians have advanced a different principle for subdividing the orders of curves, which, they think, is less precarious than the consideration of figure. It is founded on the number of branches which run out to an infinite distance. And, as the number of such branches depends on the number of real binomial factors of that member of the equation, where the indeterminate quantities rife to the highest dimensions, it cannot be denied that there is here an analytical character fit to be the basis of a systematic arrangement. This new principle has the more imposing an aspect, as it succeeds completely for lines of the second order, where the number of different curves, as has already been noticed, corresponds exactly with the varieties of the highest member of the equation in regard to binomial factors. M. M. Euler and Cramer have both given a classification of lines of the third order founded on the number of infinite branches; and although they agree in the first or principal divisions, yet they differ from one another in subdividing these; for the former classifies the whole order in sixteen genera, while the latter enumerates only fourteen. We may therefore conclude that there is something arbitrary in all the classifications of curve lines hitherto proposed, and that mathematicians have not clearly pointed out the route which is to be followed, at least in what regards the minute subdivisions.

**General Properties of Curves of all Orders.**

Newton has remarked that all geometrical curve lines have properties analogous to those which the ancient geometers have demonstrated of the conic sections. In treating of so extensive a subject, the nature of our work necessarily confines us to a general view only; but as it is in tracing the properties of curve lines common to all the orders, that the superior power and excellence of the algebraic method is most to be admired, we must not pass over to interjecting a part of the theory of curve lines with a general remark.

Refining the general equation of lines of the second order, viz. 

\[ y^2 + 2 a x y + b x^2 + 2 c y + 2 d x + e = 0 \]

Let the position of a point, situated any where in the same plane, and referred to the same axis as the curve, be determined by the abscissa \( p \), and the ordinate \( q \); let a right line (making an angle denoted by \( m \) with the ordinate \( q \))
be drawn to cut the curve, and let \( e \) denote the segment of this line between the point and the curve; let \( x \) and \( y \) be the abscissa and ordinate of the curve drawn from the extremity of \( e \); then, supposing the ordinates to be perpendicular to the axis, it is plain that \( e \) Sin. \( m = y + f \), and \( e \) Cos. \( m = p + x \); whence \( \frac{y}{m} = \text{Sin.} \) \( m = \Delta \) and \( \frac{x}{m} = \text{Cos.} \) \( m = \Delta \); let these values of \( x \) and \( y \) be substituted in the equation of the curve, and, for the sake of brevity, put, 
\[
A = \text{Sin.} \Delta m + 2 a \text{Sin.} m \text{Cos.} m + b \text{Cos.}^2 m
\]
\[
B = \text{Sin.} m \text{Cos.} m + a \text{Cos.} m + b \text{Sin.} m \text{q} + b \text{Cos.} m \text{q} - c \text{Sin.} m - d \text{Cos.} m
\]

then the equation of the curve will be transformed into the following
\[
A e^2 - 2 B e + C = 0
\]

And if the same substitutions be made in an equation of any order, as the \( n \)th order, that equation will be transformed into another of this form
\[
A e^n - B e^{n-1} + C e^{n-2} + \ldots + N = 0
\]

Now three of the terms of the transformed equation determine particular attention. The \( f \)th term is the constant that contains the highest power of \( e \); the coefficient of which depends only on the angle \( m \), in which the line cuts the ordinates of the curve, and not at all upon the quantities \( p \) and \( q \) that determine the position of the point through which the line is drawn: the second is the last term, which, on the contrary, depends upon the quantities \( p \) and \( q \) and not at all upon the angle \( m \); and the third is the second term, the coefficient of which involves the quantities \( p \) and \( q \) simply, without any of their powers, or products. From these observations some general properties of curve lines may be readily deduced.

1. A right line cannot meet a curve line in more points than there are units in the number which denotes the order of the curve. For, in the transformed equation, if the quantities \( p \) and \( q \), and the angle \( m \), which determine the position of the cutting line, be supposed to be given, then \( e \) will be the unknown quantity; and every value of \( e \) which satisfies the equation, will give a point common to the right line and the curve; but the number of such values cannot be greater than the exponent of the highest power of \( e \), which, it is plain, is the same as the number that denotes the order of the curve.

2. If there be any number of parallel straight lines, every one of which cuts the curve in as many points as there are units in the number which denotes the order of the curve, then a straight line may be drawn to cut all the parallels in such a manner, that the sum of the segments of each of the parallels on one side of the line shall be equal to the sum of the segments of the same parallel on the other side of the line. Let the coefficient of the first term of the transformed equation, containing the highest power of \( e \), be taken away by division, then
\[
A e^n - B e^{n-1} + C e^{n-2} + \ldots + N = 0
\]

an equation which, in the present hypothesis, has all its roots real; for they are manifestly the segments that lie between the point through which the line is drawn and the several points where it cuts the curve; it follows, from what has already been noticed, that the coefficient of the second term, \( \frac{B}{A} \), will be of this form \( a + b \times \text{Cos.} \Delta + c \times \text{Sin.} \Delta \); and if we suppose the angle \( \Delta \) to be given, then we may determine \( p \) and \( q \) so that \( a + b \times \text{Cos.} \Delta + c \times \text{Sin.} \Delta = 0 \); in which case, the second term of the above equation will be wanting; but when the second term is not of an algebraic equation is wanting, then the sum of the positive roots is equal to the sum of the negative ones; that is, in the present instance, the sum of the segments, on one side of the point through which the line is drawn, is equal to the sum of the segments on the other side of it; now the equation \( a + b \times \text{Cos.} \Delta + c \times \text{Sin.} \Delta = 0 \) belongs to a right line, the position of which depends on the quantities \( a, b, \) and \( c \), that is, on the angle \( \Delta \); therefore, the property in question will take place for every line drawn to make an angle equal to \( \Delta \) with the ordinates of the curve, provided it cut the curve in the requisite number of points.

The property which is here demonstrated of all geometrical curves, is analogous to what is proved of lines ordinarily applied to the diameters of the conic sections; and thus the right line, determined by the equation \( a + b \times \text{Cos.} \Delta + c \times \text{Sin.} \Delta = 0 \), may, in general, be called a diameter; and the parallels which it cuts may be said to be ordinately applied to that diameter.

3. A point be affixed in the plane of a curve, and two right lines be drawn through it, so as to be parallel to two lines given by position, and both to cut the curve in as many points as there are units in the number which denotes the order of the curve; then the continued product of all the segments of one of the right lines, between the affixed point and the several points where the line cuts the curve, will have to the like product under the segments of the other right line, the same constant ratio, wherever the point through which the two lines are drawn, is affixed. Let \( \rho \) and \( \varphi \) denote the abscissa and ordinate that determine the position of the affixed point; and let \( m \) be the angle which one of the two right lines, drawn through the affixed point, makes with \( e \); then the segments of this line, between the affixed point and the several points of section of the curve, will be the roots of the equation
\[
\frac{e^n - B}{A} e^{n-1} + C e^{n-2} + \ldots + N = 0
\]

which roots, in the present hypothesis, will be all real; therefore the continued product of the same segments will be equal to \( \frac{N}{A} \), the last term of the equation; and it is to be recollected, that \( N \) depends only on \( p \) and \( q \), and \( A \) only on the angle \( m \). In like manner, if \( m' \) denote the angle which the other right line makes with \( e \), then the continued product of the segments of this line will be equal to \( \frac{N}{A'} \); where \( N \) is the same as before, and \( A' \) is derived from the angle \( m' \), in the same manner that \( A \) is derived from the angle \( m \); therefore the first product is to the second product as \( \frac{N}{A} \) to \( \frac{N}{A'} \), or as \( \frac{1}{A} \) to \( \frac{1}{A'} \); a ratio which plainly depends only on the angles \( m \) and \( m' \), and remains the same for long as the two lines are drawn parallel to two lines given by position.

Many other general properties of curve lines might be deduced from the transformation we have here used; but we have already enlarged on this subject as far as our limits will permit. The application of fluxions to the drawing of tangents, determining the points of contrary flexures, and other important parts of the theory of curve lines, will engage our attention in other parts of our work. Such of our
our readers as with to acquire a profound and critical knowledge of this part of the higher geometry, may consult Stirling's "Lincei terris ordinis Newtonianus;" Maclaurin's "Geometria Organica;" and his other works; the second volume of Euler's "Introductio in Analysin infinitorum;" and Cramer's "Introductio à Pattalyce des lignes courbes Algébriques."

Curves of Tangent Approach. See Approach.

Curve of double curvature, or Curve having a double curvature, is used for a curve, all the parts of which do not lie in the same plane; that is, such as cannot be described on the same plane.

The curves commonly treated of in geometry, are supposed to be described, or to have all their points placed in the same plane; but if a curve be supposed to be described on a curve surface, in such a manner that all the points of that curve cannot lie or be situated in one and the same plane, then will the curve so described have a double curvature.

M. Clairaut has published an ingenious treatise on curves of double curvature. See his "Recherches sur les Courbes à double Courbure," Paris, 4to. 1731. Mr. Euler has also treated this subject in the "Appendix to his Analytis Infinitorum," vol. ii. p. 523.

Curve, Inflexion of a. See Inflection.

Curve, Quadrature of a. See Quadrature.

Curves, caustics, in the higher geometry, a curve formed by the concourse, or coincidence of the rays of light reflected, or refracted from some other curve.

Every curve has its twofold caustic; accordingly, caustics are divided into catacaustics and diacaustics; the one formed by reflection, the angle of reflection being equal to that of incidence, the other by refraction.

The genesis of these curves may be thus conceived: let A B, A B, &c. Plate. 11. Analytis, fig. 24, represent an infinite number of incident rays, that he all in one plane of incidence; it is evident, that after reflection or refraction, they will not belong to a single point or focus, but cut one another in an infinite number of points: then, if a curve be supposed of such a shape as to touch every one of the reflected or refracted rays B F, B F, &c. produced, if need be, in the points F, F, &c. the curve F F F is called a caustic by refraction or reflection, as the name is applied to reflected or refracted rays. It is plain, that if two tangents B F, B F intersect one another in G, and be supposed to approach one another till they coincide, the points of contact and of intersection will also coincide; and therefore the reflected or refracted ray touches the caustic in that point of the ray, where its intersection with the next ray vanished, when they were supposed to coincide. And if two incident rays infinitely near to each other be conceived to revolve about their focus A, in the plane of incidence, the focus F or point of intersection of the reflected or refracted rays will describe the caustic above defined; which is real or imaginary, as F is the focus of converging or diverging rays.

Or, a caustic by refraction, called a diacaustic, may be supposed to be thus generated. Imagine an infinite number of rays, as B A, B M, B D, &c. (fig. 25.) issuing from the same luminous point, B, to be refracted from, or to, the perpendicular MC, in the curve A M D; and so, that C E, the lines of the angles of incidence C M B be always to C G, the signs of the refracted angles C N G, in a given ratio; then the curve line, which touches all the refracted rays, is called the diacaustic.

M. Bouguer observes, that there are two caustics formed at the same time, by convex and concave surfaces; and that they occasion two different images of objects seen by reflection from them. See his Traité d'Optique; or Priestley's Hist. of Vision," p. 233. See also on this subject, Smith's Optics, p. 171-181.

Caustic curves have this remarkable property, that when the curves that produce them are geometrical, they are equal to known right lines.

Thus, the caustic formed by reflected rays from a quadrature, or a circle, which came at first parallel to the diameter, is equal to three-fourths of the diameter; which is a fort of rectification of curves that preceded the invention of the new doctrine of infinites, on which most of our rectifications are built.

Caustic curves are usually supposed to be the invention of M. Tschirnhausen; but it is only the name he invented. The first mention he made of it was in the year 1669, when he produced no inference but that of the caustic in a circle, which he might have learned from Dr. Barrow's Lectiones Opticæ, published in 1669. It would have been easy for him to have done the fame for any curve, by the help of the radius of curvature published by Huygens in his Horologium Oscillatorium, in 1673. It is certain this had been done by Sir Isaac Newton as early as the year 1669, as appears from his Lectiones Opticæ, which were read that year at Cambridge, though not published till after his death, viz. in 1725. Act. Phil. Lond. ann. 1723. p. 564. Newt. Lection. Opt. sect. 4. Pref. Stat. Rep. Lett. tom. i. p. 50, fig.

Curve, Harmonical. See Harmonical Curve.

Curve Reflectaire, in Optics, so called because it is the appearance of the plane bottom of a basin covered with water to an eye perpendicularly over it. In this position, the bottom of the basin will appear to rise upwards from the centre outwards; but the curvature will be less and less, and at last the surface of the water will be an asymptote to it. M. Mairen, who first conceived this idea from the phenomena of light, found also several kinds of these curves; and he gives a geometrical deduction of their properties, showing their analogy to caustics by reflection. Ac. Par. 1740. H. 121. M. 1. Dr. Priestley's Hist. of Vision, p. 752.

Curves by the Light, or Courbes a l' Lumière, a name given to certain curves by M. Kardzewski, a Polish gentleman. He observed, that any line, straight or curved, exposed to the action of a luminous point, received the light differently in its different parts, according to their distance from the light. These different effects of the light upon each point of the line, may be represented by the ordinates of some curve which will vary precisely with these effects. Dr. Priestley's Hist. of Vision, p. 752.

Curvé, Exponential, is that defined by an exponential equation; that is, by an equation, wherein is an exponential quantity, $e$, $x$, $a$, &c.

The properties, genefes, &c. of particular curves, $e$, $x$, the cycloid, conchoid, &c. See under their proper heads, CYCLOID, CONCHOID, &c. See also the preceding article CURVE.

Curve, Logarithmetic. See LOGARITHMIC.

Curves, Radial, is a denomination given by some authors to curves of the spiral kind, whose ordinates, if they may be so called, do all terminate in the centre of the including circle, and appear like so many radii of that circle; whence the name.

Curve, Rectification of a, denotes the finding a right line equal to a curve. For the praxis hereof, see RECTIFICATION OF CURVES.

Curves, Regular, are such whose curvature proceeds continually in the same uniform geometrical manner. Such are the perimeters of the conic section, &c.
Such as have a point of inflection, or regression, and which being continued to a certain point, turn themselves a contrary way, are called irregular curves. Such are the conchoid, and the solid parabola, which has a square for its parameter. See Flexion and Retrogression, and Curve fupra.

Curve, Tractory. See Tractrix.

Curve, Characteristic triangle of a, in the higher geometry, is a rectilinear right-angled triangle, whose hypotenuse makes a part of the curve, not sensibly different from a right line. It is so called, because curve lines are used to be distinguished hereby.

Suppose, $y$ the semiordinate $m$ (Plate Analytis, fig. 11.) and $P$ another point, then will $P$ be the differential of the abscissa; and letting fall a perpendicular, $m \overline{R} = P$, then $R$ will be the differential of the semi-ordinate. Draw, therefore, a tangent $T$, and the infinitely small arc $M$ will not differ from a right line; consequently, $M m R$ is a rectilinear right-angled triangle, and constitutes the characteristic triangle of that curve.

CURVET, in the 'Magazine. See CORTET.

CURVICAUDA, in 'Natural History,' the name of a species of bee fly, very common in England, and very troublesome to hortics, commonly known by the name of the 

CURVILINEAR, or CURVILINEAL Figures, in Geometry, are spaces bounded by crooked lines, as the circle, ellipse, spherical triangle, &c.

CURVILINEAR Angle and Superficies. See ANGLE and SUPERFICIES.

CURVIROSTRA, in Ornithology, a species of loxia; which fee.

CURVOSTRA Fimbriis, in Natural History, the name of a species of foible fisc, found very frequently in the stone quarries of Northamptonshire, and the neighbouring counties. It is a species of cockle, and is distinguished by its beak not flanding in the middle, but always inclining to one or the other side. The shell is sometimes found remaining entire, and in its native flat and condition, but more frequently there is flaty matter deposited in its place.

CURULE CHAIR, Silla Curulis, in Antiquity, a high ivory chair, wherein certain of the Roman magistrates had a right to sit.

The curule magistrates were, the scribes, prætors, consuls, and censors. The senators, who had borne those charges, were carried to senate on curule chairs, as also those who triumphed: the chair being fitted into a kind of chariot, currus; whence the origin of the word curulis.

The curule chair is used, on medals, to express a curule magistracy: when traversed by a halta, it is the symbol of Juno, and serves to express the conservation of princes.

CURULE STATURE. See STATURE.

CURUPA, in Geography, a town of South America, in the Brazil, seated on the south side of the river of the Amazons; built by the Dutch, but now possessed by the Portuguese.

CURUSURUS, in Botany. Plin. See PAULLINUS CURUS, and PINNATA.

CURUCA palus, Rheed. See TABERNAMONTANA alter-nifolia.

CURUCA, in Ichthyology, the name of an American fresh-water fish, of an oblong, and not flattened body. It grows to a foot and a half in length; its mouth is very large. It is eaten in the Brazil.

CURWILLET, in Ornithology, the sandering, or CHARDIERIUS Calidris; which see.

CURZA, or CURSA, in Geography, a town of France, in the department of the Gola, in the island of Corse. It is the chief place of a canton, in the district of Corte, and contains 3467 inhabitants.

CURZAY, a small town of France, in the department of the Vienne, on the river Vene; 15 miles S.W. of Poitiers.

CURZOLA, CURSOLI, or CURSOLA NIGRA (which see), a small island of Dalmatia, in the gulf of Venice, ceded by Ragusa to the Venetians in the year 1380. It abounds in wood, which makes the situation convenient for the building of ships, and produces good wine. It is about 20 miles long, and S broad, and contains one city, and several villages. N. lat. 43° 17'; E. long. 15° 4'.

CURZOLA, a town of European Turkey, at the east end of the island of the same name; the see of a bishop, and residence of a governor. It is fortified with strong walls and towers, and has a good harbour. The Turks attempted to make a descent here in the year 1557, but were repulsed by the women, after the men had fled.

CURZOLARI, an island, or rather five small islands, which are little more than rocks, in the Mediterranean, near the coast of Greece; 13 miles E. of Cephalonia.

CUS, in Ancient Geography, a river of Africa, in Mauritania Tingitana; supposed to be the present Omniraba.

CUSANO, in Geography, a town of Naples, in the province of Lavora; 22 miles N.E. of Capua.
CUSCO, or Cuzco, in Geography, the most ancient city of Peru, in South America, and still the second of that vice-royalty, Lima being the first. It was founded by the first Inca, Manco Capac (i. e. rich in virtue) who is supposed to have reigned in the 12th or 13th century, as the seat and capital of his empire. Having pacified it with the first Indians, who voluntarily submitted to him, he divided it into two parts, which he called high and low Cuzco; the former having been peopled by Indians assembled by the emperor himself, and the latter by those whom his courtiers (his filter) Mama-Oello had prevailed upon to leave their wandering mode of life. Previously to his marriage, he declared himself and his filter to be children of the sun. The first part forms the north, and the latter the south division of the city. Here he founded the temple of the sun, and appointed virgins of the royal blood to serve that divinity. The houses were originally low and small, like cottages; but as the empire increased, they assumed a new appearance; so that when the Spaniards landed in these parts they were astonished at the extent and splendour of the city, especially at the magnificence of the temple, the grandeur of the palace of the Inca, and the pomp and richness becoming the seat of a vast empire. In October, 1534, Don Francisco Pizarro entered and took possession of it in the name of Charles V. emperor, and king of Spain. This was followed by a siege of the Inca Manco, who lost great part of it in ashes, but without dislodging the Spaniards. Here Manco Capac was crowned with the permission of Pizarro; but being afterwards defeated by the Spaniards, he retired to the mountains, and is supposed to have died about the year 1553. This city stands in a very uneven situation on the skirts of mountains, which are watered by the little river Guatanay. On a mountain contiguous to the north part of the city are the ruins of that famous fortress built by the Incas for their defence; from which it appears, that they intended to inclose the whole mountain with a prodigious wall, so constructed as to render the ascent of it impracticable to an enemy, and capable of being easily defended within. It was strongly built of free stone, and remarkable for its dimensions and the magnitude of the stones, as well as the art with which they are combined. The internal works of the fortress, consisting of apartments, and two other walls, are chiefly in ruins, but the outward wall is standing. A subterranean passage, of singular construction, led from the palace of the Incas to the fortress: and those ruins, together with the fragments of a pavement of flags which belonged to Lima, are no mean monuments of ancient art. The city of Cuzco is nearly equal to that of Lima; and the latter may be called the maritime capital of Peru, whilst the former may be considered as its inland metropolis. Proudly situated amongst the surrounding Andes, and boasting its origin from the first of the Incas, Cuzco still retains the majesty of a capital. Its north and west sides are surrounded by the mountain of the fortress, and others called "Sanac;" on the south it borders on a plain, which has several beautiful walks. Most of the houses are of stone, covered with red tiles; the apartments are spacious, and finely decorated; the moldings of the doors are gilt, and the other ornaments and furniture correspond to the elegance of the buildings and taste of the inhabitants. The population of Cuzco is estimated by Alcedo at 26,000; but it fluctuated greatly by a pellicence in 1730, and has of late years very much decayed. Three-fourths of its inhabitants are said to be Indians, who are very industrious in the manufacture of biches, cotton, and leather; and they have also a taste for painting, in which they are said to excel. Cuzco is episcopal, and its bishop is suffragan to the archbishop of Lima. The cathedral is a large, rich, and handsome edifice, and, though smaller, preferred by some to that of Lima; it is served by three priests, one for the Indians of the parish, and the other two for the Spaniards. Cuzco has also eight other parishes; a convent of Dominicans, the principal walls of which were formerly those of the temple of the inn; and eight others of Franciscans, Augustines, Jesuits, &c. The government of the city consists of a corregidor, and two alcaldes, chosen out of the chief nobility, according to the custom of all the cities in South America. Here are three colleges, one of which has a seminary for the cathedral, in which are taught Latin, the sciences, and divinity. The members of the cathedral chapter, besides the bishop, are the dean, archdeacon, chanter, rector and treasurer, canons, and prebendaries. There are four hospitals, one of which is supported by the tolls of the neighbouring bridge, on the Apurimac. The courts of justice are those of the revenue, consisting of two judges, a court of inquisition, and of the couts. The diocese of Cuzco comprehends 14 different jurisdictions; the right of which is that of Cuzco, extending two leagues. In this district the temperature of the air is various, but in some parts the cold is intense, though both heat and cold are generally tolerable: the coldest parts produce good pasture for all sorts of cattle, and the valleys afford plenty of grain and fruits. In the "Intendency" of Cuzco, as this district is now called, with its dependency of Carabuia, the only mines mentioned in the "Mercurio Peruano," are those of silver; 15 in number, which were successfully wrought. S. lat. 13° 25'. W. long. 71° 15'.

CUSCOWILLA, the capital of the Alachuca tribe of Indians, pleasantly situated in East Florida, upon a high swelling ridge of sand hills, within 300 or 400 yards of a large and beautiful lake, abounding with fish and wild fowl. The lake is terminated on one side by extensive forests, consisting of orange groves, overtopped with grand magnolias, palms, peepar, tilia, live oaks, &c.; and on the other side by green plains and meadows. The town is composed of 50 habitations, each consisting of two houses, large and convenient, and closely covered with the bark of the expreble. Each has a little plot for a garden, containing corn, beans, tobacco, and other vegetables. In the great Alchua, a wet savannah, at the distance of about two miles, is an exiled plantation, cultivated by the whole community, of which each family has its appropriate part. Each family collects and depicts in the granary its proper fraction, letting apart a small contribution for the public granary, which is situated in the midst of the plantation.

CUSCUTA. in Dantry, Dodder, (cuscuta, or cucubeba, Mod. Greek, a name applied to some parasitical plant, but it is not determined what particular one was intended, and it is equally uncertain whence the name was derived; some suppose from cuzcu, consus; others from the Arabic asf-feth, or al-fath,) Tourn. 652. Linn. Gen. 170. Schreb. 277. Willd. 262. Gart. 376. Juss. 125. Vent. 4. 2. Clas an order, treternia diginta, Linn. Wild. Lam. Penan- dria, Smith. Flor. Brit. Nat. Ord. Convolv. Jun. Undetermined. Vent.

Gen. Ch. Cal. Perianth one-leafed, four or five-leafed, stiffly at the base. Cor. monopetalous, egg-shaped, or somewhat campanulate, longer than the calyx, four or five-leafed. Stam. Filaments four or five, and shaped, the length of the calyx; anthers roundish. Pit. Germ superior, globular; styles two, erect, short; stigma simple. Peric. Capsules globular, its lower part covered by the stiffly ca-
CUSH, two-celled, dividing horizontally. Seeds in pairs, somewhat globular.


Obf. The number of parts varies in different, and sometimes in the same species, but is most frequently five.


2. C. pithyurus. Leffler dodder. Mart. Lam. Ill. Smith Fl. Brit. Eng. Bot. 55. (C. europaea f.; Linn. Sp. Pl. Lam. Enc. Willd. Epithymum, five cuscuta minor; Bauh. Pin. 219.) "Flowers sessile, with a fringed scale inserted into the corolla at the base of each lamen; stigma acute." Less than the preceding. Stems twilled. Flowers clustered; corolla white, funnell-shaped, with a short tube, generally four-cleft; calyx red; flaments inserted into the throat of the corolla, alternate with its segments, having at the base of each a crenate-shaped scale incumbent on the germ; styles elongated, acute. Common in Great Britain, especially in the southern counties of England, on beans, grass, and various other plants, to which it is so pernicious that it is called by the common people Devil's-guts, or bell-weed. Dr. Smith, we believe, is the first botanist who has pointed out the true specific difference between these two plants. Professor Martyn and La Marcck had previously separated them, but without being aware of their distinguishing characters. La Marcck, in particular, questioned whether they are sufficiently distinct, and has even figured epithymum under the name of cuscucæ. 3. C. americana. Linn. Sp. Pl. 2. Mart. 3. Lam. 11. 4. Willd. 2. (C. floribus pedunculatis; Jacq. Amer. 24. C. inter majorem & minorem; Sloan. Jam. Hist. 1. 201. tab. 120. fig. 4. C. ramoa repens; Brown. Jam. 149.) "Flowers peduncled, five-cleft; corolla tubular; border small, spreading." Stems much branched, leaflets, twining, parrtialfe, tender, flaming, yellowish. Flowers greenish, inclining to yellow, small, clustered, fcntlefs; common peduncles very short; calyx withering; the colour of the corolla, egg-shaped, five-cleft; segments roundish, blunt, concave, short, converging; corolla cylindrical; tube the length of the calyx; scales five, fringed, converging, attached to the petal below the flaments; flaments always five, upright, from the upper part of the tube, the length of the corolla; anthers oblong, erect; styles little longer than the corolla; stigma capitate. Seeds convex on one side, flatish on the other, one, two, or three often abortive. A native of North America and the West Indies, on vines and trees. According to Sloane, the items are very strong, stretching themselves over very large trees, and whole fields and paltures. 4. C. africana. Willd. 3. (C. americana; Thunb. Prod. 32.) "Peduncles one-flowered; corolla five-cleft." Stem filiform, more flender than in the preceding species. Flowers smaller; peduncles with a lanceolate bracte at the base. A native of the Cape of Good Hope, on trees. Linneas found this species growing on a dried specimen of myrica ziziphius, and described them both together as one plant in the first edition of his Species Plantarum, under the name of echinus myricoides; and in the appendix to the second, under the name of schreberea filiformis. 5. C. monogyna. Willd. 4. Vahl. Symb. 2. 32. (C. lupuliformis; Mart. 5. Krock. Siles. tab. 36. C. orientalis viticulis crassifflorum; Tourn. Cor. 45. C. major caulis lupuli; Buxb. Cent. 1. 15. tab. 23.) "Flowers peduncled, monogynous." The habit of cuscuta americana, but twice the fize. Segments of the calyx egg-shaped, fhmng. Corolla twice the length of the calyx, narrowed above, permanent, edged with lanceolate teeth. Style fingle, thcker and flunter than in the other species. Stigma thick, fomewhat globular. Pericarp the fize of a pepper-corn, mucronate with the permanent flyle and stjema. Seeds compressed, somewhat kidney-shaped. Vahl. Willdenow observes that Vahl and Krockeck's plants are certainly the same; for, in the figure of the latter, the flowers are peduncled, and the permanent fingle styile is conspicuous on the fruit. According to Krockeck, the item is round, branching, very thick like hop-binds, with reddish-green or brown-purple bark, rough, and fluded with purplifh stiff rising grains resembfng millet. Flowers in racemes coming out laterally, an inch or two in length, sometimes branched, scattered, solitary, or only two or three together, not glomerate; corolla four-cleft, reddifh-white; calyx covered with a flifly skin, green, or tinged with purple. Capsule large, covered with the same skin. Seeds wrinkled, rounded. A native of Silefia and the Levant. 6. C. chinensis. Lam. Enc. 2. Ill. 1718. Willd. 5. "Flowers panicled, five-cleft; calyx angular, nearly the length of the corolla." Root annual. Stem pale or yellowish green, a little thicker than in C. europæa. Flowers white, in faw fesicles, on short branched peduncles, forming a kind of irregular panicle; calyx of the same colour as the corolla; corolla oval, almost globular, narrowed at the mouth, with five acuminate horn-like fegments; flaments five, small; germ large, globular; fyles very short, revolute, and reclining on the germ; stigma somewhat capitate. This plant was seen in flower by La Marcck in the royal garden at Paris, in 1784, twined about an osyem, the seeds of which had been fent from China, and with which its seeds must have been intermixed.

Ventenat observes that it is not easy to determine to what natural family this singular genus belongs, on account of the difference which prevails among botanists with respect to the structure of the embryo of its seeds. Linneas pronounces it acetylodonous; Adanson and Gartner consider it as monocotyledonous; and Jussieu presumes it to be dectylodonous.

Cuscuta altera & major; Camel. Petiv. See Cassyta filiformis.
Cuscuta baccifera barbadeaefum; Plum. See Cassyta filiformis.
Cuscuta, Rumph. 5. tab. 184. fig. 4. See Cassyta filiformis.
Cuscuta solitis sukordatis; Hort. Clift. See Basella rubra.
Cuscuta ramis arborum innascient, caroliniana; Pign. See Tllandria scariosa.
Cuscuta rumbat-puti; Rumph. See Cassyta zeayana.

CUSE, in Geography, a small town of France, in the department of the Doubs; 15 miles S.E. of Vepail.
CUSH, or as some write it CUS, in Biblical and Ancient History, was the eldest son of Ham and grandson of Noah; and,
and, according to Josephus, the father of the Ethiopians, who were, in his time, called Cushites, not only by themselves, but by all the inhabitants of Aea. Others conceive it to be more probable, that he rested himself in the south-eastern part of Babylonia, and in the adjoining part of Susiana, still called Khuzéfán or Chufidan, the land of Chus; from whence his posterity, in the succeeding generations, might have passed into other countries. It appears from Scripture, that a part of Arabia, near the Red Sea, was named Cush. Cushian and Midian are joined together, as the same or neighbouring people, dwelling in tents; and, in other places, the Arabs are made to border on the Cushites, who, therefore, cannot be the Ethiopians: in a word, by Cush in Scripture is always to be understood Arabia. As for those texts which are alleged to prove that Cush is sometimes taken for Ethiopia, they may also be expounded of Arabia. Cush, according to the Arabian and Persian traditions, which name him Cutha, was king of the territory of Babel, and refixed in Irak, where two cities existed of his name; and hence Dr. Hyde concludes, that Cuth reigned in Babylonia, and sent his descendants removed to Arabia, though it is difficult to assign the peculiar habitations of any of them: and this uncertainty has given occasion for supposing Cush to be Ethiopia, and for spreading these people all along the coast of Africa to the extremity of Mauritania.

Among the Abyssinians, as Bruce informs us in his Travels (vol. i. p. 376.), it is a tradition, derived, as they say, from time immemorial, and equally received among Jews and Christians, that almost immediately after the flood, Cush, grandson of Noah, with his family, passing through Atbara from the low country of Egypt, then without inhabitants, came to the ridge of mountains which still separates the flat country of Atbara from the more mountainsous high-land of Abyssinia. This tradition says, that terrified with the apprehension of another deluge, that awful event being recent in their minds, they chose for their habitation the fides of these high mountains, where they might be secure, and where the adjacent country was fertile and pleasant. Whatever might be their motives, here, it is said, the Cushites, with unparalleled industry, and with instruments now unknown, formed for themselves commodious habitations in mountains of granite and marble, several of which remain entire to this day, and promise to be of much longer duration.

As the Cushites became populous, they occupied habitations in the neighbouring mountains, and gradually extended the industry and arts which they cultivated, as well to the eastern as to the western ocean; but they never descended from their caves, nor chose to reside at a distance on the plain. Many of their descendants still occupy the same mountains and hovels of stone, similar to those which their ancestors made for themselves in the beginning of their settlement.

The Abyssinian tradition further says, that they built the city of Axum at an early period, in the days of Abraham. Soon afterwards they extended their colony to Abbara, where, as Herodotus informs us (lib. ii. c. 29.), they successfully pursued their studies, from which Josephus says (Antiq. Jud.) they were called "Meroëtis," or inhabitants of the island of Meroë. From Meroë they probably, in process of time, stretched on to Thebes. While these improvements were advancing in the central and northern territory of the descendants of Cush, their brethren to the south extended themselves along the mountains that run parallel to the Arabian gulf, in the country called "Saba," or "Azahë." This was the principal mart and source of supply for the Abyssinian mythæ and frankincense. The northern colonies of Cushites, proceeding from Meroë to Thebes, were intent upon the improvements of architecture, and building of houses; and inhabiting these for their caves, became traders, farmers, and artificers of various descriptions, and even practical astronomers, from having a meridian night and day fixed from clouds.

The opinions of Thebaid. Letters too, at least one fort of them, and arithmetical characters, we are told, were invented by the Cushites of the middle regions; while trade and astronomy, the natural history of the winds and seafarers, necessarily employed that part of the colony that was established at So-fala, melt to the southward. The nature of the commerce of the Cushites, the collecting of gold, the gathering and the preparing of their spices, necessarily fixed them perpetually at home; but their profit lay in the dispersion of these spices through the continent; otherwise their mines, and the trade produced by the pellaein of them, would be of little avail. The Cushites of course needed carriers; and such were presented to them among their neighbours, who lived in plains, having moveable tents or habitations, attended their numerous herds, and wandered from the necessities and periodicity of their occupation. The Cushites, who were in the Hebrew language called "Phut," and in all other languages "Shepherds," a name they still bear, fulfilling by the same occupation. (See SHEPHERDS.) The whole employment of the shepherds had been the dispersion of the Arabian and African commodities all over the continent; by which employment they became a great people; as that trade increased, their cattle increased also, and consequently their number, and the extent of their territory.

The learned Bryant traces the appellation Cush, by the aid of etymology, through a variety of ramifications and changes; and discovers traces of it in the names of places, and the manners and rites of their inhabitants, through various and very remote regions of the globe. Cush, he says, in the Babylonian dialect, seems to have been called "Cuth," and many places where his posterity settled were named Cutha, Cuthain, Cutaea, Cuta, Cutha, and Cuthan. Thus Chufidan, seat of the Tigris, which was the land of Cush, was likewise called Cuthie and Cilicia by different writers. Cush was the father of those nations, denominated Ethiopians, who were more truly called Cushites and Cufes; and who were more numerous and more widely extended than perfons have imagined. The author to whom we now refer traces the origin of the Cushites or Cushites to the first settlement of the descendants of Noah soon after the deluge. Their several shades were affixed them, as he conceives, by the immediate appointment of God. The children of Shem were particularly regarded in the general distribution; and they were fixed near the place of their seperation. They had in general Aea for their lot, as Japhet had Europe, and Ham the large continent of Africa. The children of Cush, however, would not submit to the divine dispensation; and his son, Nimrod, who first assumed regal state, drove Ashur, one of the sons of Shem, who had been settled on the western side of the river Tigris, from his demesnes, and forced him to take shelter in the higher parts of Mesopotamia. The sons, disdaining the divine order, which arranged the habitations of the posterity of Noah, went off under the conduct of the arch-rebel Nimrod; and, after having remained for a long time in a roving state, arrived at last in the plains of Shinar. These they found occupied by Ashur and his sons, who had been placed there by divine appointment. Him they ejected, and seized upon his dominions; which they immediately fortified with cities, and laid the foundation of a great monarchy. This ejection of Ashur, as Mr. Bryant thinks, happened after the general migration.
CUSH.

migration; and when the Cuthites had ejected Ashur, they afterwards trespassed upon Elam, in the region beyond the Tigris. The dispersion from Babel, according to this writer, did not include the whole of mankind, but related solely to the sons of Cush; whose intention it was to have founded a great, if not an universal, empire: which was frustrated by this event. The Cuthites had many associates, probably out of every family, who were apostates from the truth, and had left the flock of their fathers and the worship of the true God, in order to follow the rites and worship of the Cuthites. These were the perfiduous, who, fearing that they might be separated and scattered abroad, built the tower of Babel, as a land-mark to which they might repair; and Mr. Bryant conjectures, that it was probably an idolatrous temple, or high altar, dedicated to the host of heaven, from which they were never long to be absent. That the sons of Cush, who wished to remain where they first settled, instead of occupying the countries to which they were appointed, were the chief agents in creating the tower of Babel, and in profaning these rebellious principles, is plain from the passage, in which it is said of Nimrod, the son of Cush, that "the beginning of his kingdom was Babel." The defection, as our author imagines, was not general, nor the judgment universal; for it is not likely that all mankind should co-operate with this tyrant. The confusion of speech and consequent dispersion related merely to the Cuthites of Shinar and Babylon, and to their adherents, who seem to have been a very numerous body. The dispersion of the Cuthites is an event referred to, directly or indirectly, by many ethnic writers; and our author says, that it is manifestly to be discovered under the figure of the flight of Bacchus; and the diffusion of that moveable body, which made to bold a stand, and the scattering of them over the face of the earth, are represented under the figure of the dismantling the same perfid. Our author discovers traces of the rebellion of the Cuthites in the wars of the giants and Titans, defied by ancient writers, and of their appellation in the people called Scythians. As these people were the first apostates from the truth, they introduced the worship of the sun, and paid similar reverence to the stars, and the whole host of heaven. They regarded them as fountains, from whence were derived to men the most salutary emanations. This worship was styled the fountain worship. One of the titles of the Cufcan shepherds, who came into Egypt, was derived from this worship, and derived from "El-Ain," the fountain of light, which they worshipped. The golden age of the poets was, according to our author, the age of Cush, denominated by the Greeks Cufes, and Critois.

These Cuthites, the sons of Cush, who feized upon the region of Babylonia and Chaldaea, and constituted the first kingdom upon earth, and who were called by other nations Cuthan, Cufcan, Arabinus, Oretus, Erythrean, and Chithopan, were an ingenuous and knowing people, and at the same time very prolific. They combined with others of the line of Ham; and were enbited, at a very early period, to carry on an extensive commerce, and to found many colonies; so that they are to be traced in the most remote parts of the earth. A large body of this people invaded Egypt, in its infant state, when it was composed of small independent districts, artificers and unformed, without any rule or polity. They seized the whole country, and held it for some ages in subjection, and from their arrival the history of Egypt commences. The region between the Tigris and Euphrates, where they originally resided, was styled the country of the Chaldean or Chaldian; but by the western nations Chaldaea. It lay towards the lower part of the Tigris, to the west, and below the plain of Shinar. On the opposite side to the east was the province of Elam, which country they seem to have invaded, and to have occupied the upper part. This country consisted of that fine region called afterwars Susiana, and Chufilan, which was watered by the Utin, Chobar, and Choaspes, and by other branches of the Tigris. When the Persians gained the sovereignty of Asia, it was from them denominated Persis, which was only another name for Cutha; for the Persians were the Cuthites of that country, under a different appellation. This Cutha was by the Greeks called Scuthia. It extended far towards the east, and was in great measure bounded by Media to the north. This is one of the countries called Cutha in scripture; and by other people it was rendered Ethiopia. The Ethiopians were, therefore, Cuthites or Cuffans. Accordingly Eusebius says (Chron. p. 11.) that Cusus was the person from whom came the Ethiopians; an appellation formed from ABES and $\phi$, and derived from their complexion. This was a sacred term, a title of the chief deity, whence it was inflamed by the people, who were his votaries and defendants. The sons of Cush came into Egypt under the name of Auri- ta and shepherds, and also of Ethiopians, whence Egypt inherited the name. The Cuthites also settled at Colchus, the Colchis of the Greeks, whence it was called Cuthia and Ethiopia. They likewise came under the titles of Cufus and Belus into Syria and Phœnicia, where they founded many cities; and we are informed by Strabo (l. 10) that this country was called Ethiopia. Eubœa and Samothrace were distinguished by a similar appellation. The extreme settlement of this people was in Spain, upon the Balearic Islands and Gades; some of whom traversed a great part of Africa, and others gained possession of different parts of the sea-coast. Some of the same family were found on the coast of Mauritania. The original Ethiopia was the region of Babylonia and Chaldaea, where the first kingdom upon earth was formed, and the most ancient kingdom in the world. Here also the first idolatry began. And as the Scythe, or Cuthites, were the same people, it is no wonder that they were represented as the most ancient people in the world; even prior to the Egyptians. Another title by which the Cuthites were distinguished was that of Erythreans; and the places where they resided received it from them. The Cuthite Erythreans, who settled near Midian, upon the Sinus Eritreaus, conferred this name upon that gulf, and the Peric of Etiopia was distinguished by the same denomination. Upon the whole, our author concludes by reciprocal evidences from the most genuine history, that the Cuthites, Ethiopians, and Erythreans were the same people; and that they had a more general name of Σκῆς, Scuthia. Mr. Bryant further undertakes to shew, that not only the Scythe of Colchis, Media, and Thrace, with those upon the Palus Mecenas, were in general called the race of Cush, but that all nations styled Scythian were in reality Cuthian or Ethiopian. Having fixed upon the province of Susiana, and Chufila, they possessed the navigation of the Tigris downwards; and probably commenced a very early trade. They obtained footing in India, where they extended themselves beyond Gedrosia, and Carmania, upon the chief river of the country. They also occupied various parts of India; and the same people who imported their religious rites and science into Egypt, carried the same to the Indus and Ganges, and thence south into China and Japan. Some colonists undoubtedly came from Egypt; but the arts and sciences imported into India came from another family, even the Cuthites of Chaldaea; by whom the Mizrains themselves were instructed, and into Egypt they passed westward. Hence we need not be surpris'd, if we find the same customs in India, or the same names of places as are to be met with in Egypt, or

Colchis,
Colchis, or the remoter parts of Iberia. Many instances of this kind are produced by the learned cymalogists. The sons of Chus, however distinguished, whether they be called Oritae, Arabians, Ethiopians, or Erythreans, were in all places celebrated for science. They were sometimes called Phoencians, and those of that name in Syria were of Cuthite extraction. The Mizraim, who settled in Egypt, before the dispersion of the Cuthites and their adherents, had no share in their rebellion, nor in the Titanic war, which ensued. Their country was that which in aftertimes was known by the name of Upper Egypt. When the Cuthites, or Titanic brood, were driven from Babylonia, they fled to different parts; and a large body of them betook themselves to Egypt. Confederate and well-disciplined, they easily overcame a nation so rude and inexperienced as the Mizraim. They soon took Memphis, the frontier town of Egypt, and afterwards overran the whole region above, and kept it in subjection. The Cuthite or Ethiopian tribes were also called Arabians, and the province of Cuthan in Egypt, the same as the land of Geshen, was denominated the Arabian nome, which was the belt of the land of Egypt. They were also called Hellenes, Phoenicians, and Arzites. The people so called were the first who reigned in Egypt; and with them, as we have before observed, the history of the people must commence. Manetho informs us, that the whole body of this people had the appellation of royal shepherds; a title which Bryant conceived was more particularly given to their kings. They borrowed this mark of distinction from their ancestors in Babylonia; among whom it seems to have been common. It is somewhat remarkable that Nimrod, the first tyrant upon earth, should have matted his villain under the mock title of a shepherd. From him it was derived, and transferred to other kings, in Chaldea, and afterwards in Egypt. At the time when the Cuthite Ethiopians arrived, lower Egypt was very much a kind of moral, but under their direction it was drained by numerous canals, and rendered the most beautiful country in the world. They carried a flax from the Pelusian branch of the Nile to the western gulf of the Red Sea. The chief of the pyramids at Cochrone are said to have been erected by them. They raised the most ancient obelisks in Egypt, which were marked with hieroglyphics, curiously wrought, and these were the sacred characters of Egypt, known only to the priests, and which had been introduced by the Cuthite Ethiopians. After the Cuthites had drained Lower Egypt, and had built cities there, every city had probably some sacred emblem, as the goat, hawk, ibis, crocodile, or dog, represented in sculpture, either upon the gates, or upon the entablature of their temples. This characteristic denoted its name as well as the title of the deity, to whom the place was sacred; and the deity in those cities was often worshipped under such particular symbol. Some of the poets allude to this. They have represented the diffusion of the sons of Chus from Babylonia as the flight of the gods into Egypt; where they are supposed to have sheltered themselves under the form of these sacred symbols. After the Cuthite shepherds (see SHEPHERDS) had been in possession of Egypt about 260 or 260 years, they were obliged to retire to the amount of 240,000 persons. The Egyptians succeeded to the Cuthites in their cities and temples; and having been initiated in their rites never forsook them. When the Cuthites were ejected from Egypt, they withdrew to many parts; and particularly to the coast of Syria; which they occupied under the titles of Delidas, Cadmians, and Phoenixes. Hence they went to Hellas, to Ethiopia, and Iberia, and the coast of the great Atlantic. A colony also settled at Colchis, and upon different parts of the Pontic region. Wherever they came they were in every respect superior to the natives; they were skilful in physic, and the knowledge of the properties of herbs; they cultivated the vine, and taught the composition of fermented liquors, fermented and discovered, which they made use of in all countries, whether they migrated; but their achievements in these ways have been attributed to some one hero, either Oritas, Heracles, or Bacchus. Their religion consisted in the worship of the sun, under various titles; to this were added divine honours, paid to their ancestors. The Bashan of the first ages, which was attended with particular mysterious rites. In these were commemorated the circumstances of the deluge, and the history of the great patriarch, through whom mankind was preferred. The Cuthites who settled in Sicily seem to have been a very powerful and intelligent people; but those of Ethiopia were far superior. The two most distant colonies of the Cuthite family were founded upon the Atlantic ocean; the one in Europe to the north; the other opposite at the extreme part of Africa in the country called Mauritania, inhabited by the Atlantic Ethiopians. They considered themselves as part of the same family with the gods: and they were undoubtedly descended from the chief of the first deified metals. Those who occupied the provinces of Iberia and Baetica, on the other side, were distinguished by the same title, and preferred the same histories. They were of Erythrean and Ethiopie race; and gave name to the island Erythra, or Erythia, which they occupied for the sake of trade, and where they had the city Gacona, said to be of high antiquity.

Mr. Bryant has shown that a great resemblance once existed between the numerous colonies of the same family. They carried the art of weaving, first practised at Arabia in Babylonia, and thence extended to other neighbouring cities, and in process of time to the most remote parts of the world, to a high degree of excellence. The people of Egypt were famous for this manufacture. They were famous for their flax and linen at Colchis, Campania, Baetica, and other parts of Spain. The Indi were also noted for this manufacture. The art of dyeing was also discovered by people of this family. The wonderful art of managing silk, and of making up cotton, was found out by the Indi-Cuthites, and from them it was transferred to the Seres. To them are also attributed the game of chess, and the use of those cyphers, or figures, commonly called Arabian. They are said to have written letters in a cipher, but whether by this was meant really linen, or whether we are to understand a kind of paper manufactured from it, is uncertain. (See Paper.) Those who cultivated the grape brought it to the highest degree of perfection. The Morisco wine, produced in Sicily by the ancients, is well known, and has been highly celebrated. Cydonion in Syria, Cypris, Crete, Crete, Citha, and Salib, were famous on the same account. The fine wine of Sicily, of Thrace, and of Campania, in which the country was the Phrygian and Formian grapes, was in high repute among the ancients. In Iberia and Mauritania they had some of very noble growth. (Strabo, p. xiv. p. 115.) There was also wine among the Indie Ethiopians, particularly in the country of the Oxydraceae, who were supposed to be the descendants of Bacchus. (Strabo, p. xiv. p. 115.) They had also a strong drink made of rice, which was used in their sacrifices. The people of Laconia and Baetica made a fermented liquor called 'Zuth,' the knowledge of which was derived from Egypt, in which they were supposed to have been instructed by Oritas. Hecules calls it wine, and says it was made of barley. It is also mentioned by Strabo, (lib. iii. p. 233.) In short, all of the Cuthite family were renowned for their wisdom. The
The natives of Cutch, who were of the Cuthite race, were devoted to magic, and had their nightly orgies in honour of the moon; and among the different branches of this family we discover an extensive acquaintance with the properties and uses of different herbs. But they were pre-eminenly distinguished by the mighty works and edifices, which they erected on and erected in the different parts where they settled. All those mounds and causeways, the high roads and flately structures, which have been attributed to Semiramis of Babylonia, were the works of these people. They formed well lakes, and carried on canals at a great expense; and they opened roads over hills, and through forests, which were before impassable. (Strabo, lib. xvi. p. 1371.) The mounds produced by various kinds erected in Egypt were the works of the Cuthites; those Arab shepherds, who built Heliopolis or Belcar, and who were the pyramids and Titans of the first ages. The pyramids of Egypt are also ascribed by Mr. Bryant to these people. (See Pyramid.) The buildings, which the Cuthites erected, were in many places styled Cyclopsian, from a title given to the architects. Many ancient edifices in Sicily were of their construction; for they seem to have been the first inhabitants of this island. They were called Lacedaemon and Lamiit; and resided chiefly in the Leontine plains, and in the regions near Ætna. They erected many temples; and likewise high towers upon the sea-coast, and founded many cities; some of the ruins of which are still extant.

The noble character of the Cuthites, who by their extraordinary inventions and improvements were regarded as general benefactors to mankind, was, however, greatly tarnished by their cruelty; for which they seem to have been infamous in all parts, and which seems to have been derived from their rites and religion, that had always a tendency to blood. The Cuthist upon the Mazois, and in the Tauric Chersonesus, are described as very inhospitable; and all those in their vicinity were of a savage cast, and guilty of great barbarity. In various parts they also contracted a habit of robbery and plunder; so that they lived in a state of piracy, making continual depredations.

We have already hinted, that one of the most considerable colonies which went from Babylon, was, that of the Indi, or Sindhi, called Eastern Ethiopians. They settled between the Indus and Ganges, and one of their principal regions was Cuthaia, rendered by the Greeks Cathaia. They traded in linen and other commodities, and carried on an extensive commerce with the provinces to the south. A large body of them passed to the north, under the name of Sica and Saccans, who ranged very high, and got possession of Sogdiana, and the regions upon the Iaxartes. From thence they extended themselves quite to the ocean. These sent out large bodies into different parts; and many of the Tartarian nations are descended from them. They gained possession of the upper part of China, which they denomin- nated Cathaia; and Japan was probably in some degree peopled by them. Their religion also extended far; and many noble edifices in various parts of the East afford evidences of their original. Near Syriam in Pegu are two temples, built after the same model; and other temples and pagodas in India, together with the deities to whose service they were consecrated, and the rites of worship practised in them, tell us of their original. For other particulars relating to the sons of Cuth or Chus, or the ancient Cuthites, see the "Annales of Ancient Mythology," in 3 vols. 4to. paffin. CUSHAI, in Geography, a small river of America, which discharges itself into Alibemari, found, between Chowan and the Roanoke, in N. Carolina. CUSHENDEN BAY, a small bay on the east coast of the country of Antrim, Ireland, where there is pretty good anchorage when the wind does not blow on shore. Long. 5° 33' W. Lat. 5° 41' N. CUSHETUNK MOUNTAINS, mountains of America, in Hunterton county, New Jersey. CUSHING, a township of America, in Lincoln county, Maine, separated from Warren and Thomaston by St. George's river, incorporated in 1789, containing 1415 inhabitants, and lying 216 miles E by N. of Boston. The E. part of this township is now "St. George's," 35 miles S. E. of Willsafet. CUSHION, LADIES, in Botany. See Saxifruga hypnoides. CUSHION, SEA. See Statice. CUSHION, a rubber, in Electricity. See Electrical machine. CUSHION, in Engraving, is a bag of leather filled with sand, commonly about nine inches square, and three or four thick, used for supporting the plate to be engraved. CUSHION, in Gilding, is made of leather, fastened to a square board, from fourteen inches square to ten, with a handle. The vacancy between the leather and board is filled with fine tow or wool, so that the outer surface may be flat and even. It is used for receiving the leaves of gold from the paper, in order to its being cut into proper size and figures.

CUSI, in Ancient Geography, a town of Lower Pannonia, 16 miles from Bononia, according to the Itinerary of Antonine, supposed to be the present Cudela.

CUSI, in Orchology, a name given by the people of the Philippine islands to a very small and very beautiful species of parrot. CUSIGHE, SIMONE DA, in Biography, so called from the place of his nativity, a small town near Cadore, in the Venetian flat, a painter who flourished in the 14th century. Some of his madonnas of considerable merit are still to be seen at Cusighe, and date from 1382 to 1429. Lanzi, Stor. Pitt. CUSP, CUSPS, properly denotes the point of a spear or sword, but is used in botany to express the points, or horns, of the moon, or any other luminary. CUSP, in Aflfology, is used for the first point of each of the twelve houses, in a figure, or scheme, of the heavens. See House.

CUSP of a Curve, in Geometry. See Curve. CUSPIDATED, in Botany, is when the leaves of a flower end in a cusp, or point, resembling that of a spear. CUSPIDATED hyperbola. &c. See Curve. CUSPIDATUS DENS, in Anatomy, the canine tooth of the human subject. Mr. Hunter affirms the former name to it. CUSPIDIA, in Botany, Germ. See Gorteria cernua. CUSSEAC, in Geography, a small town of France, in the department of the Upper Vienne, six miles S. of Roche Chouart. CUSSE/EIM, in Ancient Geography. See Coss.

CUSSAMBIUM, in Botany. Lam. Encyc. Rumph. Amb. 1. 154. tab. 57. A rare hitherto but little known, which seems to have some affinity with the ponga of Rheedee, and the tataiba of Pifo, but differs in having a one-seeded drupe for its fruit; it is rather lofty, but not very spreading; its wood hard and heavy; the bark brown, rugged, and very brittle. Leaves generally opposite, oval-lanceolate, entire on short petioles. Flowers small, in slender lateral racemes. Fruit roundish or egg-shaped, commonly rough, with pointed caduceus tubercles; flesh rather thin, of a plesant acid taste; kernel of the nut white, tender, oily.
A native of the Molucca islands. The ripe fruit is eaten raw. A yellowish oil is expressed from the kernels, which having a pleasant smell, and not growing rancid, is used for lamps, and as an ingredient in various odoriferous preparations.

CUSSENS, in Geography, a small river of America. In Cumberland county, Maine, which runs a S.E. course to Cacof bay, between the towns of Frankfort and North Yarmouth.

CUSSET, in Latin Coffetum, a town of France, in the department of the Allier, 21 miles N. of Roanne, and 255 S.E. of Paris. It is the chief place of a canton, in the district of La Palisse, with a population of 3015 individuals. The canton has 12 communes, and 11,443 inhabitants, upon a territorial extent of 180 kilometers.

CUSSE, a town of Egypt, 15 miles S. of Assumnein.

CUSSEITAI, an Indian town, in the western part of Georgia, 12 miles above the broken Arrow, on Catahouchee river.


Eff. Ch. Petals five, trigonous. Calyx formed by the dilatation of the edge of the receptacle, five-toothed.

Sp. 1. _C. thyrsifera_. Linn. jun. 1. Mart. 1. Lam. 1. Willd. 1. Thum. _At. Nov. Upfal. 3. tab. 12._ "Leaves digeritate; _fyllets_ sessile, ridge-shaped, truncated, three-toothed; _flowers_ in racemes." A shrub. St. in a flame towards the bottom, unequal, simple, the thickness of a finger. _Leaves_ on the upper part of the stem, near together, alternate, petiolate; _fyllets_ fearity emarginate, sometimes, but rarely five-toothed; _teeth_ remote, small; _petioles_ long; _florinas_ inflato-saccate. _Flowers_ in terminal cylindrical racemes, forming an umbel; rays four, quite simple. S. naked towards the bottom, bearing raceme flowers towards the top. There is a variety with jointed _fyllets_, the lowest joint dilated at the end into smaller lobes, so as to appear proliferous. 2. _C. ficacata_. Linn. jun. 2. Mart. 2. Lam. 2. Illus. _Pl. 187_. Willd. 2. Thum. _At. Nov. Upfal. 3. tab. 13._ "Leaves digeritate in sevens; _fyllets_ somewhat pedicelled, simple, and lanceolate, or ternate; _flowers_ spik'd; Whole plant smooth. _Flowers_ in a single terminal spike about two inches long. Both species are natives of the Cape of Good Hope. Juffien observes that this genus is scarcely distinct from _panax_ but that, if kept separate, the shrubby species of _panax_ should be removed to it with _P. undulata_ of Aublet, unialta of Rheede and perhaps aralia umbellifera of La Mark.

CUS TA RAPPLE. See ANNAWA.

CUSSTINE, ADAM PHILIP DE; in Biography, one of the French generals in the revolutionary wars, was born at Metz, on the 4th of February 1750, of a noble family, and served in the seven years' war against Prussia. Having obtained the command of a regiment of dragoons, he exchanged this regiment against another which was ordered to America, and fought for American independence. On his return to France, he was promoted to the rank of maréchal de camp (major general). In 1789, the nobles of Metz named him one of their deputies at the first national assembly, where he embraced the popular party, and moved the offering of the insignia. (paper money) the diffusion of the ministries, and the abolition of the military establishments of the French princes.

In 1792 Cusstone was appointed commander in chief of the troops collected in the camp of Sainpont, and afterwards of the army of the Rhine. He took possession of Spires, Mentz, and Frankfort on the Main, but a furious and impetuous proclamation against the princes of Germany made them unite their forces to oppose him. He was driven from Frankfort by the Prussians, from Worms by the Austrians, and obliged to retreat into Alsace.

Denounced by the Jacobins as a traitor, he appeared at the bar of the convention to defend himself, but was condemned and executed on the 25th of August 1793. He went weeping to the scaffold, and died with cowardice. His son, who had been appointed French minister at Berlin, and whom the king of Prussia would not receive, showed much more firmness when, at the age of 29, he suffered death in January 1764, for having been a bad Jacobin.

The military talents of general Cusstone were never held in greater estimation; the soldiers under his command detested him for his pride and stern severity. _Nov. Dict. Hildvigne._

CUS TO DE, FR. A holier cap. See CHAPELON.

CUSTODES admittendi, _cus to de am endingi, in Law_, are writs for the admitting, or removing, of guardians.

CUSTODES libertatis Anglos auxilios in arte, parliament, was the style, or title, in which writs, and other judicial proceedings, did run in the time from the death of Charles I. till Oliver was declared protector. _See Stat. 12 Car. II. c. 3._

CUS TO DIA. _See Recit de custodia terre et hereditis._

HEREDERE deliberando ali qui baliet Custodiam terre. See HEREDAE.

CUS T DIA M, Lat.; a military guard. Military prisoners at Rome, and in the provinces, were guarded in the following manner, particularly if guilty of serious offences or crimes. The guilty person had a chain fastened to his right hand, and to this chain was equally fastened the left hand of him who guarded him. Sometimes, for greater security, the criminal was confined under the guard of two persons tied with him. The chain was long enough for both the guards and the criminal to walk freely. This sort of confinement, however, which must have been attended with much inconvenience and have withdrawn from useful and more important duty a great number of soldiers, did not exist at all periods of the Roman government.

CUS T DIO, HIERONYMUS, in Biography, a painter born in Antwerp, who fled to England and in the reign of queen Elizabeth. There is at Woodburn (the seat of the duke of Bedford) a portrait of Elizabeth Bruges, daughter of lord Chandos, with the following inscription, Hieronymus Custodi Antwerpensis, fecit 1589. Walpole.

CUS T DIO of Idiots and Lunatics, used formerly to be committed by the king himself to proper committees, in every particular case; but now, to avoid solicitations and the very shadow of undue partiality, a warrant is issued by the king under his regal sign manual to the chancellor or keeper of his seal, to perform this office for him: and if he acts improperly in granting such cures, the complaint must be made to the king himself in council. (3 P. Wms. 108. Reg. Br. 267.) But the previous proceedings on the commission are on the law side of the court of chancery, and can only be redressed (if erroneous) by writ of error in
CUSTODIY of the temporalties of bishops, or of all the lay revenues, lands, and tenements (in which is included his barony), which belong to an archbishop's or bishop's fee, forms the first branch of the king's ordinary revenues. Upon the vacancy of the bishopric, these are in immediately the right of the king, as a consequence of his prerogative in church matters; by which he is considered as the founder of all archbishoprics and bishoprics, to whom during the vacancy they revert. The policy of the law hath vested this custody in the king, partly because before the dissolution of abbeys, he had the custody of the temporalties of all such abbeys; and priorities as were of royal foundation, on the death of the abbot or prior, and partly because, as the successor is not known, the lands and possessions of the fee would be liable to spoil and devastation, if no one had a property in them. The law, therefore, has given to the king, not the temporalties themselves, but the custody of them till such time as a successor is appointed; with power of taking to himself all the intermediate profits, without any account to the successor; and with the right of prefiguring (frequently exercised by the crown) to such benefices and other patronages as fall within the time of vacancy (fut /. Edw. II. c. 14. P. N. B. 312). This revenue could not formerly be granted out as a feft; but now by fut /. Edw. III. c. 14. s. 3. the king, may, after the vacancy, leave the temporalties to the dean and chapter; failing to himself all advowsons, canons, and the like. For the prevention and remedy of irregularities which anciently occurred with regard to these temporalties, it was one article of the great charter (6 H. III. c. 5.) that no waft should be committed in them, nor the custody of them be sold. The same is ordained by the statute of Westmister, 3 Edw. I. c. 24.; and also 14 Edw. III. R. 4. c. 4. The statute 1 Edw. I. R. 2. c. 2. guards against the king's feizing the temporalties of bishops, during their own lives. This revenue, formerly considerable, is now reduced almost to nothing: for, at present, as soon as the new bishop is consecrated and confirmed, he usually receives the retribution of his temporalties quite entire, and untouched, from the king; and at the same time does homage to his successor: and then, and not sooner, he has a fepulchre in his bishopric, and may maintain an action for the profits. Co. Litt. 67. 44.

CUSTOM is used to denote the manners, ceremonies, or ways of living of a people, which in time have turned into habit, and by usage obtained the force of laws. In this sense, custom implies those things which were at first voluntary, but are now necessary by use. Custom. Conistituta, in Lat. is a law not written, established by king usage, and the consent of our ancestors. No law can oblige a people without their consent; so wherever they consent, and use a certain rule or method as a law, such rule, &c. gives it the power of a law; and if it is universal, then it is common law: if particular to this or that place, then it is custom. 3 Salk. 172. And as to the rise of customs, when a reasonable act once done, was found to be good, and beneficial to the people, then they used it often; and by frequent repetitions of the act, it became a custom; which being continued without interruption time out of mind, it obtained the force of a law, to bind the particular places, persons, and things concerned therein. Thus a custom had beginning, and grew to perfeftion; and a good custom must be grounded on antiquity, continuance, peaceable acquisition, reason, certainty, and mutual convenience.

As to the antiquity of any custom, it must have been used so long, that the memory of man runneth not to the contrary; so that if any one can shew the beginning of it, it is no good custom. On this account no custom can prevail against an express act of parliament; since the statute itself is a proof of a time when such a custom did not subsist. (Co. Litt. 104.) As to continuance, any interruption would cause a temporary ceasing; and the revival gives it a new beginning, which will be within time of memory, and thus the custom will be void. But we must distinguish between an interruption of the right, and an interruption merely of possession, which, though it takes place for 10 or 20 years, will not destroy the custom. (Co. Litt. ibid.) Peaceable acquisition is such as has not been subjected to contention and dispute: for as customs owe their original to common consent, their being immediately disputed, either at law or otherwise, is a proof that such consent was wanting. Moreover, customs must be reasonable; or rather, taken negatively, they must not be unreasonable. This sir Edward Coke explains (l. Ibd. 62.), as referring to artificial or real reason, warranted by authority of law, on which account a custom may be good, though the particular reason of it cannot be shewn; and if it be still in force, if no good legal reason can be assigned against it. With reference to the certainty of custom, it is observed, that a custom, limiting the deficit of lands to the most worthy of the owner's blood, is void; for how shall it be determined? but a custom to defend to the next male of the male exclusive of females, is certain, and therefore good. (1 Rol. Abr. 565.) A custom to pay a man's improved value for a fine on a copy-hold estate, though the value is uncertain; for the value may at any time be ascertained: and the maxim of law is, "id certum est, quod certum reddi potest." Again, customs, established by consent, must be, when established, compulsory, and not left optional. Customs must be consistent with each other; one custom cannot be set up in opposition to another. For if both are really customs, then both are of equal antiquity, and both established by mutual consent; which it would be absurd to lay of contradictory customs.

If it be asked, how are those customs and maxims which lie at the foundation of common law to be known, and how is their validity to be determined? The answer is, by the judges in the several courts of justice. They are the depositories of the laws, the living oracles, who must decide in all cases of doubt, and who are bound by an oath to decide according to the laws of the land. Such judicial decisions are the principal, and most authoritative evidence, that can be given, of the existence of such a custom as shall form a part of the common law. These are registered and preferred under the name of records, explained in our reports, and digested for use in the authoritative writings of the venerable fages of the law. See Records and Reports, and Authorities. The effect of a custom thus established, is, that in popular places, and limited monarchies, it serves to interpret the written laws: for, in absolute monarchies, it is the king alone who has the power of interpreting laws. Hence, the word custom is still retained, and serves to express the particular rights, and municipal laws, established by usage in particular provinces, &c. when they are reduced into written laws.

In this sense, most of the common law of England is lex non scripta; being originally no more than the customs of our forefathers. The Romans were governed by customs, or unwritten laws, after the expulsion of their kings.

Lex non scripta, in this sense, is used in opposition to statutes,
CUSTOM.

Statutes, or acts of parliament; which commence laws at once. See Common Law.

Another branch of the lex non scripta, or the unwritten laws of England, consists of particular customs, or laws which affect only the inhabitants of particular districts. These, or some of them at least, are undoubtedly the remains of that multitude of local customs, out of which the common law, as it now stands, was collected at first by king Alfred, and afterwards by king Edgar, and Edward the Confessor; each district mutually sacrificing some of its own special usages, in order that the whole kingdom might enjoy the benefit of one uniform and universal system of laws. But, for reasons that have been now long forgotten, particular counties, cities, towns, manors, and lordships, were, at a very early period, indulged with the privilege of abiding by their own customs; in contradistinction to the rest of the nation at large; which privilege is confirmed to them by several acts of parliament. Magna Charta 9 Hen. III. c. 9. 1 Edw. III. r. 2. c. 9. 14 Edw. III. r. 1. c. 2. 2 Hen. IV. c. 1. See Borough-English, Gavel-Kind, Dover, &c.

As to the allowance of special customs, it is observed, that customs in derogation of the common law must be confirmed strictly. Thus, by the custom of gavel-kind, an infant of 15 years may, by one specie of conveyance, (called a deed of settlement) convey away his lands in fee-simple, or for ever. Yet, this custom does not empower him to use any other conveyance, or even to lease them for seven years; for the custom must be strictly pursued. (Co. Cop. § 33.) And, moreover, all special customs must submit to the king's prerogative. Therefore, if the king purchaseth lands of the nature of gavel-kind, where all the fons inherit equally; yet upon the king's demise, his eldest son shall succeed to these lands alone. (Co. Litt. 15.) As general customs are determined by the judges, particular customs, such as are used in some certain town, borough, city, &c. shall be determined by a jury. (1 Levitt 40.)

For the difference between custom and prescription, see Prescription.

Custom of London. The principal local customs of this city are the following: if a citizen and freeman dies, leaving a widow and children, his goods and chattels, (dunning for the widow her apparel, and the furniture of her bed-chamber, called the "widow's chamber," shall be divided into three parts; the widow shall have one part, the executor or administrator another, to discharge legacies, &c. and the children the third part. If he leaves only a widow, or only children, they shall respectively, in either case, take one moiety, and the administrator the other. (1 P. Wms. 341. Salk. 240.) If he leaves neither widow nor child, the administrator shall have the whole. (1 Show. 157.) This portion, or "dead man's" part, the administrator was wont to apply to his own use, (3 Freeman 85; 1 Vern. 133.) till the statute 1 Jac. II. c. 17, declared that the same should be subject to the statute of distribution. So that if a man dies worth £100. per annum, leaving a widow and two children, this estate shall be divided into 18 parts; of which the widow shall have eight, six by the custom and two by the statute, and each of the children five, three by the custom and two by the statute:—if he leaves a widow and one child, the shall still have eight parts, as before; and the child shall have ten, fix by the custom and four by the statute:—if he leaves a widow and no child, the widow shall have three-fourths of the whole, two by the custom and one by the statute; and the remaining fourth shall go, by the statute, to the next of kin. It is also to be observed, that if the wife be provided for by a jointure before marriage, in bar of her customary part, it puts her to a state of non-entity, with regard to the custom only (2 Vern. 665. 3 P. Wms. 160.); but she shall be entitled to her share of the "dead man's" part under the statute of distributions, unless barred by special agreement. (1 Vern. 15. 2 Chan. Rep. 253.) And if any of the children are advanced by the father in his life-time with any sum of money, (not proportioning to their full proportionable part,) they shall bring that portion into hotchpot with the rest of the brothers and sisters, but not with the widow, before they are entitled to any benefit under the custom. (2 Freeman 270. 1 Eq. Ca! Abr. 155. 2 P. Wms. 526.) But, if they are fully advanced, the custom entitles them to no further dividend. The custom of London extends also to the province of York, and also to the kingdom of Scotland, and probably also to Wales; inasmuch, that the effects of the intestate, after payment of his debts, are, in general, divided according to the ancient universal doctrine of the pars rationabilis, in the manner above stated. However, in order to favour the power of bequeathing, and to reduce the whole kingdom to the same standard, three statutes have been provided: the one 4 and 5 W. & M. c. 2, explained by 2 and 3 Ann. c. 6, for the province of York; another, 7 and 8 W. III. c. 38, and a third, 11 Geo. I. c. 18, for London:—by which it is enacted, that persons within those districts, and liable to those customs, may (if they think proper) dispose of all their personal estates by will; and the claims of the widow, children, and other relations, to the contrary, are totally barred. There are two principal points, besides other less material variations, in which the customs of London and of York considerably differ. One is, that in London the share of the children (or orphanage part) is not fully vested in them till the age of twenty-one, before which they cannot dispose of it by testament (2 Vern. 589.); and if they die under that age, whether sole or married, their share shall survive to the other children; but after the age of twenty-one, it is free from any orphanage custom, and in case of intestacy, shall fall under the statute of distributions. (Perc. Chanc. 537.) The other is, that in the province of York, the heir at common law, who inherits any land either in fee or in tail, is excluded from any filial portion or reasonable part. (2 Burn. 754.) But, notwithstanding these provincial variations, the customs appear to be substantially one and the same.

A woman in London that uses a trade, without her husband, is chargeable without him, as a female merchant; and if condemned may be put in prison till she pay the debt; and her bail are liable, if the absents herself, and the husband shall not be charged. It is the custom of the city of London, that a person educated in one trade may set up in another. See Apprentice. A person may acquire the freedom of London either by the service of an apprenticehip, by birth-right, as the son of a freeman, or by purchase, under an order of the court of aldermen. (1 Mod. 125.) In London every day, except Sunday, is a market day, for the buying and selling of goods and merchandize. (5 Rep. 85.) But no person, not being a freeman of London, shall keep any shop, or other place to put to sale by retail any goods or wares, or use any handicraft trade for hire, gain, or sale, within the city, upon pain of forfeiture 5l. (8 Rep. 134. Chart. Cart. 1.)

If a debtor be a fugitive, he may be arrested before the day to find better security. See Foreign Attachment. Every tenant at will of a house above 40s. per annum in the city, ought to give and receive half a year's warning on leaving it. An arrest may be made in London, on the plaintiff's entering his plaint in either of the compters, and a serjeant of London need not shew his name when he arrests a person;
and the liberties extend to the suburbs and Temple-Bar. 

If the existence of any customs in London be questioned, it shall not be tried by a jury, but by a certificate from the lord mayor and aldermen by the mouth of their recorder (Cro. Car. 619); and he shall be such a custom as the corporation itself is interested in, as a right of taking toll, &c.; for then the law permits them to certify on their own behalf, but it must be determined by a jury (11 H. 8.). It is said (1 Ro. Rep. 105) that the courts at Westminster take notice of the customs of London, and not of any other place. But this is only where they have been certified. The customs of London are confirmed by act of parliament. S. Rep. 176. Cro. Car. 347.

Custom of Merchants: les mercatoria, a particular system of customs used only among one set of the king's subjects; which, however different from the general rules of the common law, is yet ingrained into it, and made a part of it (Wroth. 24.); being allowed, for the benefit of trade, to be of the utmost validity in all commercial transactions; for it is a maxim of law, that "Scientia juris est certamina extrema." This system of customs is so far considered as law, that it affords the rule of construction, in cases of contracts, agreements, &c., and other commercial transactions. The les mercatoria, like the lex et conuentudo parliam.; describes only a great division of the laws of England. The laws relating to bills of exchange, insurance, and all mercantile contracts, are as much the general law of the land, as the laws relating to marriage or murder. And it is the opinion of Mr. Jardine Foller, that the customs of merchants is the general law of the kingdom, and, therefore, ought not to be left to a jury after it has been settled by judicial determinations. 2 Barr. 1225.

Custom, Affirmances by. See Common Assurances.

Custom, Border by. See Dower.

Custom-Herit. See Heriot.

Custom Suit. See Suit.

CUSTOMS, in Commerce, the duties, tolls, or taxes, paid upon merchandise when brought into or carried out of a country. They appear to have been called customes, as denoting customary payments, which had been in use from time immemorial; and began to be imposed as soon as commerce became an object of public attention. Such princes as wished to encourage foreign trade, found that it brought some additional expenses upon them, as it became necessary to maintain ambassadors or other public agents in most of the countries to which their subjects exported; to negotiate treaties for the regulation of commercial intercourse; to establish courts for deciding maritime causes; and to maintain a navy for protecting merchant vessels at sea from enemies and pirates. In order to indemnify themselves for these charges, they demanded of the merchants tolls, tributes, or customes, by authority of the royal prerogative, which continuing to be paid as customary dues, came to be considered as part of the inheritance of the crown. The considerations (says judge Blackstone) upon which this branch of the revenue (or the more ancient part of it) which arose only from exports) was derived in the king, were laid to be two (Dyer. 183): 1. Because he gave the subject leave to depart the kingdom, and to carry his goods along with him. 2. Because the king was bound of common right to maintain and keep up the ports and havens, and to protect the merchants from the pirates.

The ancient customes in England, consisted of small sums paid by the merchants for the use of the king's warehouses, weights, and measures. About the year 1679, king Etheldred established duties on ships and merchandise, to be paid at Billingsgate in the port of London. In Magna Charta it was stipulated that merchants were to come into the kingdom to buy and sell post antiquas customes, which proves that some customes had been usually paid long before that time. And some have imagined, that they are called with us customes, because they were the inheritance of the king by immemorial usage, and the common law, and not granted him by any statute (Dyer. 43, pl. 44); but Sir Edward Coke hath clearly shewn (2 Inst. 58, 59.), that judge Blackstone, that the king's first claim to them was by grant of parliament (5 Edw. 1. A.D. 1274), though the record thereof is not now extant. And indeed this is in express words confirmed by statute 25 Edw. 1. c. 7. A.D. 1297, wherein the king promises to take no customes from merchant, without the common assent of the realm, "saving to us and our heirs, the customes on wool, skin, and leathcr, formerly granted to us by the commonalty aforefaid." These were formerly called the hereditary customes of the crown; and were due on the exportation of the said three commodities, and of none other; which were tried the "staple" commodities of the kingdom, because they were obliged to be brought to their ports where the king's staple was established, in order to be there tried, and then exported. These customs, granted by the act of 3 Edw. 1. consisted of a duty of fix shillings and eight-pence for every sack of wool, containing twenty-fixe flones; fix shillings and eight-pence for every three hundred woololls; and thirteen shillings and four-pence for every sack of hides; a half containing twelve dozen. These duties, with some others of inferior importance which were then lived, were afterwards denounced eystula antiqua, i.e. magna. They were payable by every merchant, as well native as stranger; with this difference, that merchant-strangers paid an additional toll, viz. half as much again as was paid by natives. The appellation eystula seems to be derived from the French word eyste, or euste, which signifies toll or tribute, and owes its own etymology to the word eustre, denoting price, charge, &c., as we have adopted it in English, eustre. By an ordinance of 31 Edw. 1. certain new duties of customs were established, to be paid by alien merchants only; these were called eystula nova or eystula parvis, and aliens' duty, and consisted of an additional duty of two shillings for every hogshead of wine imported; additional duties of forty pence for every sack of wool; fix shillings and eight-pence for every half of hides, and forty pence for every three hundred woololls, exported; two shillings for every piece of cloth dyed in grain, and six pence for every piece of clothe, in which part of a grain colour was intermixed; and twelve pence for every other cloth without grain; twelve pence for every quinsal of wax; and threepence in the pound on all other kinds of merchandise. The duty on wine, which was at first called burthenage, because paid to the king's chamber, exchanged for prizing, or a right of taking two tons of wine from every ship importing into England twenty tons or more, being afterwards imposed at so much a ton, was called tonnage; and the duty on goods not specified being imposed at so much in the pound of their equivalent value, was called a poundage. In the 47th year of Edward III., a duty of fixpence in the pound was imposed upon all goods exported and imported, except wool, woolloll, leather, and wines, which were subject to particular duties. In the 14th of Richard II. this duty was raised to one shilling in the pound; but three years afterwards, it was again reduced to fixpence. It was raised to eight-pence in the 2d year of Henry IV.; and in the fourth year
year of the same prince to one shilling. From this time, to the 9th year of William III., this duty of poundage continued at one shilling in the pound. The duties of tonnage and poundage were generally granted by one and the same act of parliament, and were called the subsidy of tonnage and poundage. These duties were at first granted, as the old statutes (and particularly 1 Eliz. c. 10.) express it, for the defence of the realm, and the keeping and safeguard of the seas, and for the intercourse of merchandise fairly to come into and pass out of the same. They were at first granted only for a fixed term of years, as for two years in Rich. II.; but in the time of Henry VI. they were granted him for life by a statute in the 31st year of his reign; and again to Edward IV. for the term of his life only;—since which time they were regularly granted to all his successors for life, sometimes at the first, sometimes at other subsequant parliaments, till the reign of Charles I.; when, as lord Clarendon expresses it (Hist. Rebells. b. iii.) his ministers were not sufficiently solicitous for a renewal of this legal grant. And yet these imposts were improvidently and unconstitutionally levied and taken, without consent of parliament, for different occasions altogether; which was one cause of the subsequent troubles. However, the king, previous to the commencement of hostilities, paided an act, with a view of correcting past errors and appeasing prevalent discontentmen, by which he renounced all power in the crown of levying the duty of tonnage and poundage, without the express consent of parliament; and also all power of imposition upon any merchandises whatever. Upon the restoration this duty was granted to king Charles II. for life, and also to his two immediate successors; and by three several statutes, 9 Ann. c. 6, 1 Geo. I. c. 12, 3 Geo. I. c. 7, it was made perpetual, and mortgaged for the debt of the public.

The subsidy of poundage having continued for so long a time at one shilling in the pound, or at five per cent., a subsidy came, in the language of finance, to denote a general duty of this kind of five per cent. This subsidy was afterwards called the old subsidy, and was levied according to a book of rates established in the 12th year of Charles II. The new subsidy imposed by the 9th and 10th William III., was an additional five per cent, upon the greater part of goods. The one-third and the two-thirds subsidy, made up together another five per cent, of which they were proportionable parts. The subsidy of 1747, made a fourth five per cent, upon the greater part of goods; and that of 1759, a fifth upon some particular sorts of goods. The old subsidy was imposed differently, upon exportation as well as importation; but the four subsequent subsidies, as well as most of the duties which have since been occasionally imposed on a great variety of goods, have been laid almost wholly upon importation: other ancient duties which had been imposed on the exportation of the produce or manufactures of the country, have either been reduced or taken off altogether. The duties thus imposed by parliament were, till the flat, 27 Geo. III. c. 13, contained in two books of rates, first by parliamentary authority, flat. 12 Car. II. c. 4, 11 Geo. I. c. 7. One of these was signed by Sir Harbottle Grimston, speaker of the house of commons in the time of Charles II.; and the other, an additional one signed by Sir Spencer Compton, speaker in the reign of George I., to which all subsequent additions have been made.

The book of rates, established in 1660, has been considered as the foundation of the present mode of levying the duties of customs, as it contained the rate of duty payable both by denizens and aliens, and the value to be fix upon different descriptions of merchandise, and specified the articles which were custom free. Some new duties on importation were afterwards imposed, and at the revolution the duties of customs confided of the following branches. 1. Tonnage and poundage granted to Charles II. for life, and to James II. for his life; which, by an account laid before parliament in the first session after the revolution, produced on a medium of four years, 577,507/. 12s. 10d.; but, according to Dr. Davenant, it produced 600,000l., clear of all charges and deductions. 2. Duties on wines and vinegar imported, granted in 1685, which by the same account produced 172,900l. 11s. 8d. 3. Duties on tobacco and sugar imported, likewise granted in 1685, and which by the same account produced 148,861l. 8s. per annum. 4. Duties on the importation of French linens, wrought flks, brandies, and East India manufactur,es, which were also established in the same year, and produced 93,716l. 8s. 1d. per annum. The total produce of the customs in 1688 was therefore about 992,682l., being more than double their amount twenty years prior to that period. A considerable increase in the public expenditure, with the introduction of the funding system, occasioned very frequent impositions of new duties, which was formerly adjoined on the principles of the old subsidy; that is, the value of the goods was ascertained by a book of rates, and the amount computed by the quantities of the goods, either with respect to gauge, to weight, or to value; the duty was, therefore, not a certain proportion of their real value, but of an arbitrary value, agreeing, perhaps, with the current value at the time of imposing the duty; but which must, from the natural fluctuations of trade and manufacture, be necessarily liable to many changes and alterations. The confederation of this mode of fixing duties was, that when they were laid on by bulk on goods of one general description, the duty was always the same, whether upon the finer or the coarser manufacture; by which means it either operated as a prohibition to the latter, or was not at all felt by the former. There was also another mode by which duties were imposed; this was by a proportion to the value on goods not rated, being the real and actual value of the same as sworn to by the importer. These principles of taxation, being once adopted, were pursued in all the new and additional duties of customs which were imposed for payment of the interest on the various loans which were raised from time to time for the public service. In some instances the additional duties were calculated by a per centage on the duties previously paid; in others a further duty was laid on a different denomination of the commodity, either with respect to its value, its bulk, its weight, or its number; and by proceeding gradually in this manner, from period to period, the numerous additions made had at length become such a mass of confusion as produced an infinity of inconvenience and delay in business, and became the subject of universal complaint among mercantile persons. The perplexity arose, not a great degree from almost all the additional duties having been appropriated to some specific fund, for the payment of certain specific annuities, in consequence of which it was necessary that a separate calculation should be made at the customs-house for each of the different duties. From the great complexity of the whole of this branch of the revenue, scarcely any one merchant could be acquainted by any calculations of his own, with the exact amount of what he was to pay; nor could much affilence in this respect be derived from the va-
rious books which had been published for the purpose of furnishing a general view of the customs, as in every inion of parliament some alteration or another was made in several of the duties, and each of these alterations, following the old principle, totally unhinged and destroyed the use of every preceding printed calculation; the officers of the customs, therefore, who from constant practice had acquired some facility in making the necessary calculations, were the only persons to whom the merchants could apply for information and direction: thus the merchant was not only in a great degree left at the mercy of the officers, who were intended to be a check upon the merchants, were forced to become their agents.

In order to remedy these inconveniences, Mr. Pitt proposed, in the beginning of the year 1787, to abolish all the duties then subsisting, and to substitute in their stead one single duty on each article, amounting as nearly as possible to the aggregate of all the various duties then payable; only in general where a fraction was found in any of the sums, to charge the nearest integral number, usually taking the higher rather than the lower, which made a small addition to the revenue. The series of resolutions submitted to the house of commons, for the purpose of carrying this measure into effect, but of which the house chose to waive the formality of reading, amounted to upwards of three thousand in number. A systematic simplicity and uniformity was at the same time introduced into the customs house accounts, by which a more distinct view has been since obtained both of the total amount of this important branch of the revenue, and of the various sources from which it arises. These beneficial regulations were the result of the laborious investigation and judicious remarks of the commissioners of public accounts, who in their 13th, 14th, and 15th reports, had fully explained the constitution of this department, the duties of its several officers, and the mode of collecting the customs both in London and the out-ports. They also pointed out many other important regulations for the reduction of expense, or the accommodation of merchants, most of which have been since carried into effect. The statute 27 Geo. III. c. 13, called "the consolidation act," repeals all former statutes imposing duties of customs and excise, with regard to the quantum of the duty; and the two books of rates above-mentioned were declared to be of no avail for the future; but all the former duties were consolidated, and were ordered to be paid according to a new book of rates annexed to that statute.

Statement of the gross and nett Revenue of the Customs, with the Rate per Centum of the Excess of Collection.

<table>
<thead>
<tr>
<th>Year</th>
<th>Gross Receipt</th>
<th>Rate per Centum</th>
<th>Nett Produce</th>
<th>Rate per Centum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1789</td>
<td>5,417,533</td>
<td>6 7 0</td>
<td>4,050,003</td>
<td>8 9 10</td>
</tr>
<tr>
<td>1790</td>
<td>5,349,478</td>
<td>6 17 6</td>
<td>3,976,808</td>
<td>9 5 0</td>
</tr>
<tr>
<td>1791</td>
<td>5,587,853</td>
<td>7 3 8</td>
<td>4,193,817</td>
<td>9 11 6</td>
</tr>
<tr>
<td>1792</td>
<td>6,645,818</td>
<td>8 9 7</td>
<td>4,467,837</td>
<td>8 17 6</td>
</tr>
<tr>
<td>1793</td>
<td>5,754,878</td>
<td>6 19 7</td>
<td>4,221,832</td>
<td>9 4 8</td>
</tr>
<tr>
<td>1794</td>
<td>5,841,840</td>
<td>7 1 8</td>
<td>3,821,216</td>
<td>10 16 8</td>
</tr>
<tr>
<td>1795</td>
<td>5,776,658</td>
<td>6 19 5</td>
<td>3,959,462</td>
<td>10 3 5</td>
</tr>
<tr>
<td>1796</td>
<td>6,381,002</td>
<td>6 2 6</td>
<td>4,533,489</td>
<td>8 12 6</td>
</tr>
</tbody>
</table>

The total gross receipt accounted for, falls short of the whole sum raised upon the public in consequence of the duties constituting this branch of the revenue, as there are fees paid to the various officers, in part functioned by law, but chiefly claimed on the ground of ancient usage, which are a very considerable charge to the merchant. In the year 1786, the opinions of the merchants respecting in London, and in most of the out-ports, were collected, upon the expediency of abolishing or regulating these fees, and of providing compensations to the officers by a tonnage duty. The merchants of London declared their wishes for a total abolition; and the various communications received from the merchants and traders at the out-ports, rendered it evident that it would be impracticable to form a general table of fees to suit all places. With a view, therefore, to ascertain the amount of the fees for which it would be proper, that a compensation should be provided, if the fees themselves were abolished, an act was passed, authorizing the treasury to appoint two commissioners of the customs in England, and one in Scotland, to enquire on oath into the emoluments of all persons employed in the service of the customs. In January 1790, these commissioners, having visited thirty-four out-ports, made their first report, recommending certain measures for relief of the coaling-trade; and in the same year an act of parliament was passed for the relief of that trade, at a considerable loss to the revenue. In March 1791, the commissioners made a second report, by which it appeared that the total of the fees received, exclusive of allowances from the crown and shares of seizures, amounted, in the year 1788, to 133,805/. 6s. 3d. In May 1791, they made their third report; in which, after stating and discussing the various opinions communicated to them by the merchants, they declared themselves to be decidedly of opinion, that an entire abolition of customs-house fees, and the payment of every person in that department wholly by the crown, would be a measure highly beneficial both to the commerce and to the revenue of the country; and they further gave their opinion, that if an entire abolition was deemed inexpedient, great advantages might still accrue to commerce, and much security to the revenue, by abolishing the fees paid to the persons usually called out-door officers; the annual amount of which was about 45,000l.; and that this measure, though of a more limited extent, would place the out-door business at the several ports of the kingdom, on an equal footing. In consequence of these representations, a bill was prepared in 1792; but the apparent difficulty of the subject, and the expense of providing a compensation upon the principle and to the extent suggested, prevented any further proceedings upon the subject; thus, every laborious investigation was rendered of no benefit, and the mercantile interest is still bartered with this highly improper mode of remunerating the servants of government. It cannot be doubted that if fixed and nett salaries could be given to every officer of the customs, proportionate to his services, instead of leaving their compensation to depend upon having additional places or employments in other situations, it would contribute greatly to the independence of the officers, to the service of the trader, and to the security of the revenue.

Any article of commerce liable to a customs duty upon importation, must, to secure the payment of the duty, be watched from the time the ship enters the port, until the duty is paid; and as it becomes forfeited by evading the duty, it may be purloined and seized. Any article liable to a duty upon exportation, must, to prevent its being changed or altered, be guarded from the time the duty is paid, until the ship has quitted the port; and an article entitled to a drawback or bounty upon exportation, must likewise, to prevent the re-landing of it, be guarded from the time the merchant delivers it to the officer, until the ship has quitted the port. Hence arises the necessity for different
different classes of officers, to attend upon and examine these articles, at different stages, in their passage between the ship and the merchant; and to pursue them if they escape the duty. The total number of officers, clerks, and assistants, employed in the management of this branch of the public revenue, was, in the year 1784, 1600, with an indefinite number of inferior attendants; since that period several additional offices have been suppressed, but the great increase in the duties has rendered it necessary to augment the number of persons employed in collecting them very considerably.

The laws relating to the customs are voluminous in bulk, and intricate in their details, comprehending not less than twelve hundred articles upon which duties are levied; about nine hundred of these are subject to rated duties, and the rest are charged ad valorem. The fluctuations relative to the customs alone fill very large volumes infolio; they are unprovided with any printed index; and the compilation, even in this state, is not published, nor can it be commonly obtained by purchase. This circumstance induced the Committee on Finance, in 1797, to recommend strongly the consolidation and simplification of the laws of the customs, by which means the revenue officer would be enabled to execute his duty with more promptitude and safety; the merchant would better know how to transact his commercial concerns with the revenue; and the foreign trader would have the means of avoiding those errors which, at present, frequently expose his property to seizure, for the omission of forms which it is almost impossible that he should know to be necessary. At some future period of peace this very useful measure will probably be accomplished.

In the year 1803, another consolidation of the duties was effected by 43 Geo. III. c. 68; but the new duties, which have been since imposed, have again deteriorated, in some degree, the simplicity then established, and will render it necessary, at no great distance of time, to recur again to the same principle.

The extraordinary system of warfare adopted in the succeeding contest between France and Great Britain, in which unprecedented decrees were attempted to be enforced, for excluding the latter country from every species of commercial intercourse with other nations, rendered necessary some measures of retaliation; with this view, new duties on exportation, commencing on 5th February 1806, were imposed on all the principal species of foreign merchandise, with the exception of the produce of the British colonies, and of articles which had been imported by the East India Company.

The total net produce of the customs, after deducting re-payments, drawbacks, bounties, and the charges of management, has been as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1802</td>
<td>£7,415,726</td>
</tr>
<tr>
<td>1803</td>
<td>7,776,775</td>
</tr>
<tr>
<td>1804</td>
<td>9,060,207</td>
</tr>
<tr>
<td>1805</td>
<td>9,325,527</td>
</tr>
<tr>
<td>1806</td>
<td>10,553,323</td>
</tr>
</tbody>
</table>

Total Gross Receipt of the Customs of Great Britain, for the Year ending 5th January 1807.

Balance in the hands of the different collectors, on 5th January 1806: £50,843 16s. 3d.
Balance in the hands of the receiver-general of Scotland, on 5th January 1806: 54,057 3s. 8d.

Carry over £105,500 19s. 11d.

Deduct appropriated duties £19,554 17s. 9d.

Total £1,920,359 16s. 4d.

The various payments to which this receipt was subject, including the net payment into the exchequer, were as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bills arising and remitted out of the revenue of 1806, but not brought to account till 1806</td>
<td>£283,759 1s. 3d.</td>
</tr>
<tr>
<td>Gross receipt within the year, including permanent and annual duties, and war taxes</td>
<td>£423,963 19s. 11d.</td>
</tr>
</tbody>
</table>

Total £1,276,924 0s. 4d.

Deducting from the gross receipt within the year, of £1,379,983, 17s. 11d., the sums paid for drawbacks on exportation, and in bounties for promoting national objects, the total nett amount of the year's duties will be £1,160,800. 4s. 11d., arising as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duties outwards</td>
<td>£621,566 16s. 5d.</td>
</tr>
<tr>
<td>Duties coastways</td>
<td>£1,355,688 17s. 8d.</td>
</tr>
<tr>
<td>Remittances from the plantations</td>
<td>26,061 16s. 7d.</td>
</tr>
<tr>
<td>Quarantine tonnage duty</td>
<td>13,370 17s. 4d.</td>
</tr>
<tr>
<td>Condemned tobacco, rent of tobacco warehouses, &amp;c.</td>
<td>17,570 5s. 11d.</td>
</tr>
<tr>
<td>Imprest money repaid</td>
<td>28,880 0s. 3d.</td>
</tr>
</tbody>
</table>

Total £11,910,000 4s. 11d.

Total Gross Produce of the Customs of Ireland for the Year ending 5th January 1807.

From duties inwards: £1,889,462 15s. 14d.

Deduct appropriated duties £1,181 1s. 5d.

Total £1,920,359 16s. 4d.
The total expeence of collecting the revenue of the customs, in the year above-mentioned, was, in England, at the rate of 5l. 1m. 3d. per cent. on the gross receipt, or 6l. 1s. 3d. per cent. on the nett produce; in Scotland it amounted to 5l. 17s. 7d. per cent. on the gross receipt, or 7l. 18s. 4d. per cent. on the nett produce. To collect the expeences of this branch of the revenue being in a great measure blended with the excise, cannot be separately stated, but they considerably exceed the rate of collection in Great Britain.

The statutes for preventing frauds in this branch of the revenue, and for directing and regulating the conduct of merchants and of the several officers of the customs are much too numerous to be here recited. Some of the principal are as follow:

In cafe goods and merchandize are brought to a port, and part of the goods are sold there, but never landed, they must pay the customs. Ships outward bound, and coming from beyond sea, having goods and merchandize on board, are to be entered at the custom-house, and the customs paid or agreed for under the penalty of 100l. and forfeiture of the goods; one moiety to the king, and another to the seller, &c. and if any concealed goods are found after clearing, which the duties have not been paid, the master of the vessel shall be subject to the like penalty. 19 and 21 Geo. II. c. 11. Officers of the customs may search ships; and having writ of affize search houses. By other statutes, foreign goods, taken in at sea by any coasting vessel, shall be forfeited and treble value: and for prevention of clandestine running of goods, if any foreign brandy, &c. is imported in vessels under forty tons, the importer shall forfeit the vessel and brandy. Run goods concealed or offered for sale, are liable to forfeiture and treble value. 8 and 11 Geo. I. When three persons are assembled and armed with fire-arms, &c. to be affiling in running goods, they shall be adjudged guilty of felony: and 50l. be paid for apprehending such offenders, &c. And two or more found in company within five miles of the sea-coast, with any spades, carts, &c. on which are put above six pounds of tea, or five gallons of brandy, or other foreign goods of 50l. value, landed without entry, and not having permits, who shall carry any offensive weapons, &c. or any officer of the customs, shall be deemed runners of goods, treated as felons, and the goods shall be seized and forfeited. If any person offers any tea, brandy, &c. to sale, without a permit, the persons to whom it is offered may seize and carry it to the next warehouse belonging to the customs or excise, and be entitled to a third part of the produce on condemnation. And persons offering any bribe to officers of the customs to connive at the running of goods are liable to a forfeiture of 50l.; obstructing such officers in entering and searching ships, incurs a forfeiture of 100l.; and if the officers are wounded or beaten on board any ship, the offenders incur the penalty of transportation, &c. 9 Geo. II. If any persons, three or more, armed with weapons, shall be assembled in order to aid in the illegal exportation of goods to be exported, or the running of uncustomed goods, or the illegal trading of any goods, or refusing the same after seizure, or the person apprehended for a felonious act relating to the customs or excise, or preventing a guilty person from being apprehended; or if such persons shall go afft, or have their faces blacked, or wear a mask, or other disguise, when paffing with such goods, forcibly obstruct or resist, any revenue officer infeizing such goods, or shall main or dangerously wound, &c. such officer, in his attempt to go on board any vessel, or flout at or dangerously wound any such person when on board, and in the execution of his office; every such person shall be guilty of felony, and suffer death. On information of any persons being guilty of any of the afoe offences, the justice may certify the information to one of the squires of the place, who is to lay it before his majesty; and his majesty may order the offender to surrender himself in 40 days after publication of the order in the Gazette; and in default thereof the order being published twice in the Gazette, and proclaimed in two markets near the place where the offence was committed, and a copy of it being affixed in some public place there, the offender shall be attainted of felony, and suffer death. Any perfon harbouring or aiding any such offender after the expiration of the time of his surrender, knowing that he has been re- quired to surrender, being prosecuted within a year, shall be transported for seven years. If any officer, &c. in the feizing, &c. of such goods, or the attempt for apprehending such offender, shall be shot, wounded, maimed, or killed, or the goods be refused, the inhabitants of the hundred, &c. unless the offender be convicted within six months, shall forfeit 100l. to the executor of any officer killed, and pay a sum to any officer hurt, &c. not exceeding 50l., and for any goods refused, not exceeding 200l. A reward of 500l. for apprehending any offender, a person wounded in apprehending any offender to have 50l. extraordinary, and the executors of a person killed to have 100l. 19 Geo. II. c. 34.

By Stat. 14 Ric. II. c. 10; no customer or comptroller of the customs shall have any ships of his own, or meddle with the freight of ships. By Stat. 6 Hen. VI. c. 5, no searcher, surveyor, &c. or their clerks &c. may have any such ships of their own; and shall use merchandize, keep a wharf, inn, or tavern, or be factor, attorney, &c. to a merchant, under the penalty of 50l. By Stat. 3 Hen. VI. c. 3; customers, collectors, or comptrollers, shall not convey customs duly entered and paid, on forfeiture of treble value, and payment of fine and random to the king. By Stat. 13 and 14 Car. II. c. 11; if any persons employed about the customs and subsidies take a bribe, or converse at any false entry, they shall forfeit 100l. and be incapable of any employment under the king; and the person who gives the bribe shall forfeit 50l. By Stat. 5 Geo. I. c. 11; if an officer of the revenue shall make any collusive seizure of foreign goods, to the intent that the same may escape payment of the duties he is to forfeit 500l. and be incapable of serving his majesty; and the importer and owner shall forfeit treble value of the goods so collusively seized. By Stat. 12 Geo. I. c. 28; officers of the customs, &c. shall not trade in brandy, coffee, &c. on pain of 50l. and forfeiture of offices. For other particulars, see Draweack, Excise, and Smuggling.

CUSTOMARY Freeholders, are a species of copyholders, of free or privileged tenure, who are derived from the ancient tenants in vilainage, and are not held to hold “at the will of the lord,” but only “according to the custom of the manor.” These may be allowed, without absurdity, to be capable of enjoying a freehold interest; and therefore the law doth not suppress the freehold of such lands to rest in the lord of whom they are held; in the tenants themselves; who are sometimes called customary freeholders, being allowed to have a freehold interest, though not a freehold tenure. See Copyhold.

CUSTOMARY Land, in Agriculture, is that description of land which is granted by the lord of a manor to a tenant under certain restrictions, in respect to fines, quit rents, &c. according to the particular rules and regulations of the manor.
The author of Modern Agriculture has remarked, that a considerable portion of the lands of this country are held under lords of manors by copyhold or customary tenures, subject to the payment of fines on the alienation of the property, the death of the lord or of the tenant, and also to the payment of certain yearly rents, and the performance of various services. That this sort of tenure, says he, should be considered not only as a grievance, but also as an obstacle to agricultural improvement, cannot appear surprising, when it is remarked that the lord of the manor is entitled to two years' improved value of the copyholds on the death of the copyhold tenant, or on the alienation of the property. Under such circumstances it is not probable that the possessor will be disposed to a liberal expenditure of money on the improvement of lands held by a tenure of this restricted kind. Besides, says he, the services performable by the proprietors of copyhold or customary lands, in the north-west of England in particular, are disgraceful in the extreme, and such as in a free country ought to be for ever abolished. They consist of cutting, drying, and loading the lords' peats, ploughing and harrowing his land, reaping his corn, making his hay, carrying his letters, &c. whenever and how often foever such services are demanded. It could not, he supposes, be a matter of much difficulty to arrange general terms, on which copyholders might have: it in their power to enfranchise the tenants, by payment of a certain sum to the lords of manors for the total abolition of this remain of the feudal system. So far as he is informed, lords of manors may, as the law now stands, make any arbitrary demands they please on their vassals for the enfranchisement of their lands; and if not complied with, they must remain in the state above described. Whereas, were an equitable mode established, whereby the copyholder could purchase his independence on reasonable terms, few would continue, he thinks, in a state of bondage, nor would the improvement of the country be obstructed by the arbitrary exactions of the superiors and great landholders. As manorial rights have been handed down from father to son for many generations; and as by the law of the country, the present possessors have as good a title to exercise these rights as any of their predecessors, it would, he says, be unjust to deprive them of the privilege, without giving them an equitable compensation; but when the exercise of these rights stands in the way of improving the national territory, and of supplying the public with provisions, it will be deemed imprudent in the legislature to permit them to exist. It is very generally known, he adds, that one great obstacle to improvement, arises from a helpless anxiety in the customary tenants, to have their little patrimony defend their children. These small properties (loaded with fines, heriots, &c. joined to the necessary expense of bringing up and educating a numerous family) can only be handed down from father to son by the utmost thrift, hard labour, and penurious living: and every little saving being hoarded up for the payment of the eventful fine, leaves nothing for the expense of travelling to see improved modes of culture; to gain a knowledge of the management and profits of different breeds of live stock, and to be convinced, by ocular proofs, that their own situations are capable of producing similar advantages: and even should they be half inclined to adopt a new practice, presumption whispers, that should the experiment fail, it could require the savages of many years to make good the deficiency.

Customary tenures are therefore allowed on all hands, he thinks, to be a great grievance, and a check to improvement. This, he thinks, might be done away on the division of common rights. The yearly value of the various customs, fines, &c. might be settled by commissioners, and twenty five, or any reasonable number of years' purchase, on this yearly value, be the price of the enfranchisement, which might be paid in money or in land, at the option of the copyhold or customary tenant. It is impossible, says this writer, that any bold argument can be urged against the propriety of abolishing, without delay, every remain of the feudal system, where it teads, in the smallest degree, to obstruct the general improvement of the country. This may, it is supposed, be accomplished with very little trouble. All that appears necessary, in regard to customary or copyhold lands, for instance, is, either to adopt the plan described above, or to pass some general act of parliament, empowering those who hold their estates only mediately of the crown, but immediately of a subject or superior, to demand of that superior, that, by means of a legal proof, he shall ascertain the actual yearly value in money or grain of the fines payable on the alienation of the property, the death of the superior or lord, or of the copyholder. Where personal services are payable, as cultivating peas, carrying letters, &c. the value of these should also be ascertained, and the proprietors, so situated, have it in their power to become independent, by paying a reasonable number of years' purchase, or by making payment annually of the sum thus ascertained to be the value of these fines and services. Were such an arrangement to be made, customary tenants or copyholders would, says he, have an inducement to cultivate their lands in the most possible manner; because they, not the superiors, would reap the profits arising from improved cultivation.

Whether the methods here proposed by Mr. Donaldson be the most proper and convenient or not, there cannot be any doubts, but that all these obstacles and restraints which have the operation of retarding and preventing the improvement of the soil, should be removed as speedily as the different nature of their circumstances will permit. See Copyhold and Land.

Customary Tenants are those who hold their estates, in consequence of the kindred and indulgence of successive lords of manors, according to particular customs established in their respective districts; and therefore, though such estates are still held at the will of the lord, and are in general so expressed to be held in the court-rolls, yet that will is qualified, restrained, and limited, to be exercised according to the custom of the manor. This custom, being suffered to grow up by the lord, is looked upon as the evidence and interpreter of his will, which is no longer arbitrary and precarious, but fixed and ascertained by the custom to be the same, and no other, that has time out of mind been exercised and declared by his ancestors. A copyhold tenant is therefore now full as properly a tenant by the custom, as a tenant at will; the custom having arisen from a series of uniform wills. And therefore it is rightly observed by Calthorpe (on Copyholds, 51. 54.) that copyholders and customary tenants differ not so much in nature as in name; for although some be called copyholders, some customary, some tenants of the verge, some free tenants, some bond tenants, and some by one name and some by another, yet they all agree in subsistence and kind of tenure;—all the said lands are held in one general kind, that is, by custom and continuance of time; and the diversity of their names doth not alter the nature of their tenure. See Copyhold.

CUSTOM-HOUSE, an office established on the frontier of a state, or in some chief city, or port, for the receipt of the customs and duties of importation and exportation,
tion, imposed on merchandise, by the authority of the

There are several custom-houses in the several ports
of England; the most considerable is that of London. It is
under the direction of nine commissioners appointed by pa-

tent; who have the charge and management of all the cus-
toms (the petty farms alone excepted) in all the ports of

England.

Other officers are, a secretary, solicitors, receiver-general,
comptrollers of the duties and payments of the receiver-
general, comptroller-general, patent comptroller, patent col-
lector, inspector of the out-port collectors' accounts, in-
pector-general of the exports and imports, registrar-general
of all ships of Great Britain, surveyors-general, survey-
ors of the out-ports, registrar of the forfeitures, receivers,
collectors and surveyors, in various departments, searchers,
all holding their places by patents: with other inferior
officers, appointed by warrant from the board of trea-
ury.

CUSTOMS and Services. See Consuetudini-
bus, &c.

CUS, or in Geography, a river of Hungary, which
runs from the Thius near its confluent with the Danube.

CUSIUS, Peter, in Geography, a painter, born in An-
"Dor, four times also called Peter Balhatar, and more

as only Balhans. He was received into the company of
painters at Antwerp, in the year 1579, and excelled in his
representations of sea, village scenes, and landscapes, in
the style of Peter Breughel. According to Heinecken, he
published, under the name of Balhatar, a book of the Geo-

graphies of the Countries of Flanders, enquired with forty
portraits and figures—The arms and devices of the knights
of the golden fleece, &c.

Cusati, Dominicus, the son of the preceding Cus-
atos, who was also a native of Antwerp, and at first called
Balhans, but being afterwards established as an engraver and
printseller at Antwerp, he returned his real name Cusatos.
He died in 1612, leaving three sons, Raphael, David, and
Jacob, who were also engravers. The plates of this artist
are neatly executed, but they discover a want of taste, and
a stiffness which renders them disagreeable to the eye. The
following are amongst his best works:—*Puggerorum et
Puggerorum Imaginis;* a book in folio, containing 64 por-
traits, 1593, very rare. A second edition was afterwards
published at Antwerp, augmented by others of Lucas
and Wolfgang Killian to the number of 127. *Effigies pi-
orum or doctorum aliquot Virorum, ad vivum delineatae,
et anna incaves per Dom. Cusatos, 1594;* 12 pieces. *Tyrol-
ium Principum Comitum genuine Eicones, 1599,* con-
taining 28 plates, full length, folio. He also engraved
after Baroccio, Paul Brill, Saffan, the Caracci and other
masters. His mark is composed of the letters D. C. united
with in A and an F. Strutt. Heinecken.

Custos Breviarum, the name of an office belonging to
the court of common pleas, executed by four persons,
and two deputies, &c. who receive and keep all the writs,
and put them upon files, every return by itself, and at the
end of each term, receive of the prothonotaries all the rec-
ords of the nisi prius, called the *plecas.*

The writs are first brought in by the clerks of affile of
every circuit to the prothonotary, who enters the issue in
the cause, to enter judgment. Four days after the re-
turn, the prothonotary enters the verdict, and judgment
thereupon, into the rolls of the court; and then delivers
them over to the *custos breviarum.*

The *custos breviarum* also makes entry of writs of

and concords on fines; and makes copies and exemplifica-
tions of all writs and records in his office, and of all fines
levied: the fines, when engrossed, are divided between the
ostos breviarum and chirographier; the former keeping
the writ of covenant and the note, the latter the concord
and foot of the fine. This officer is made by the king's letters
patent.

In the court of king's bench there is likewise a *cufus
brevium & rotulorum,* who signs such writs as are there used
to be filed, and all warrants of attorney; and transcribts
or makes out records of nisi prius, &c. This office is held
by two persons.

Custos rotulorum, an officer who has the custody of the
rolls, or records of the sessions of peace; and, some say, of
the commissio of peace itself.

He is always a justice of the peace and quorum, in the
county where he hath his office; and being the principal
civil officer in the county, as the lord lieutenant is the
chief in military command, he is generally selected on
account of his wisdom, countenance, or credit. By the
57 Hen. VIII. c. 1. (altered by 3 and 4 Ed-
ward VI. c. 1, but restored by 1 Will. c. 21;) no person
shall he appointed to the office of *Cujus rotulorum,* but
such as shall have a bill signed with the king's hand for the
same; which shall be a sufficient warrant to the lord chan-
cello; to make a commissio, aligning and authorizing
thereby the same person to be *cufus rotulorum,* until the
king hath by another bill with his own hand appointed one
other person to have the same office, by himself, or his suf-
ficient deputy, learned in the laws, and meet and able to
supply the said office. By his office he appears to be a
rather a minister than a judge; because the commissio of
the peace, by express words, lays this special charge upon him;
*Quod ad dico & loca pradicta, brevium, praepaeta, processo,
& indenturis pradicta coram te & dictis suis tuin venire fas-
itas.* It is his province to appoint the clerk of the

Custos spiritualium, the person who exercises spiritual or
ecclesiastical jurisdiction in any diocese, during the vacancy
of the see.

This, by the canon law, belongs to the dean and
chapter; but, in England, to the archbishop of the
province, by prescription: though divers deans and chapters do
challenge it, by ancient charters, from kings of this
land.

If the archiepiscopal fee be vacant, the spiritual jurisdic-
tion is committed to the dean and chapter. (2 Rold. Abr.
22, 223.) The guardian of the spiritualities may be either
guardian in law, *jure magniitatis,* as the archbishop is of
any diocese in his province; or guardian by delegation,
being the person whom the archbishop or vicar-general doth
for the time appoint. The *Custos spiritualium* hath all man-
ner of ecclesiastical jurisdiction of the courts, power of grant-
ing licences and dispensations, probate of wills, &c. during
the vacancy, and of admitting and inducting clerks pre-
fected; but such guardian cannot, as such, consecrate
or ordain, or present to any benefices. Stat. 13 Eliz. c. 12.

Wood's Infr. 255, 27.

Custos temporatium, the person to whose custody a va-
cant fee was committed by the king as supreme lord; who,
as a reward of the goods and profits, was to give an ac-
count to the escheator, and he into the eschequer.

His tryst continued till the vacancy was supplied by a

fuc-
successor, who obtained the king's writ de restitutione temporis; which was commonly after confiscation, but sometimes before. See Custody of temporariness.

CUSTRELS. The shield bearer among the ancients was so called.

CUSTRIN, or KUSTRIN, originally Koczyren, in Geography, from a large lake of that name between Custrin and Schneemünde, is a handsome and strongly fortified town of Prussia in the Neumark of Brandenburg, on the confluent of the rivers Oder and Warther, surrounded on all sides by marshes and morasses. 24 miles N. E. of Frankfort on the Oder, and 66 miles east of Berlin. The approach to Custrin on the side of the middle mark is by a cawfeway of nearly four miles in length, which has not less than thirty-six bridges; and on the side of the Neumark by another cawfeway, which has seven bridges.

In 1758 the Russians under General Fennor reduced Custrin to a heap of ruins by means of bombs and red-hot bullets: but the fortifications commanded by the brave Prussian colonel Shack de Wuthenow held out against their attempts; and the great Frederick having raised the siege and beat the Russians at Zorndorf, lodged the Russian officers in their prisoners along with the common soldiers in the cafemates, and pointing at their uncomfortable quarters, observed that they were indebted to their own cruelty for the badness of their accommodations.

Different, however, has been the fate of Custrin in 1806. Previous to the rapid advance of the French in the memorable battle of Jena, or confident that there was no Prussian army near to relieve the town, colonel Ingerhoven, who commanded at Custrin in October 1806, surrendered on capitulation to marshal Davout, on the 31st of the same month. The garrison, which consisted of 4000 men, were made prisoners of war, and marched to France. The officers were permitted to return to their respective homes on parole. When the French entered the town on the 3rd of November, they found 90 cannons on the ramparts, and immense magazines in the place.

CUT, in Inland Navigation, denotes the same with canal, branch, or arm. See Canal.

CUT, in Agriculture, is a term often used to signify the operation of castrating or gelding young animals, as lambs, calves, foals, &c.

CUT. There are five cuts established for the use of the cavalry to be made with the broad sword or saber, for which see Sword-cuttery.

To cut off, is to intercept or separate a party, detachment, or column from the main force, or place it between two or more forces separated for or is defined for; or to separate one part of an army from the main body, and either take them prisoners, or destroy them. It is a phrase generally applied in familiar use.

To cut off an enemy's retreat, is to manage in such a manner, as to prevent an hostile army or body of men from returning when closely pressed, either to their entrenchments or to a fortified town, which they had fallen or marched out from; or to prevent a detachment, advanced corps, or part of an army from leaving a position they have occupied, and retiring to another position in order to effect a junction with the main body of their army; or to prevent an hostile army or corps, that enters a country for the sake of making incursions, or for the purpose of conquest, whether the attempt be made by land or water, from returning within their own frontiers or on board their ships; or to reduce them to such difficulties without both afflicting a great loss of men and leaving many things behind them, and thereby to force them for the sake of re-embarking without molestation into a convention on terms neither very advantageous nor very ho-

nourable, as happened last war at the Heldor. Armies may be cut off either in toto, or in part, through the ignorance, timidity, or mismanagement of those who command them, or through the superior talents and skill of an enemy's general, who amidst the hurry, confusion, noise, and devastation, that generally attend pitched battles, suddenly takes advantage of some opening in the wings or centre of his enemy's army, or of those favourable incidents which occur in every engagement.

When an army is superior in numbers to another, provided it be not too numerous for all its parts to be easily managed for the purposes of co-operation, and is commanded by a skilful and intelligent officer, it may always cut off a part at least of the forces opposed to it when they come into action.

To cut floor, a sort of cant phrase among military people; as when they say, that soldiers are cut short of their pay, of their allowances, &c.

To cut up, to kill or destroy: When we say that the cavalry went in pursuit of a flying enemy, and cut the moat of them up, we mean that the cavalry killed or destroyed the moat of them.

To cut through, to penetrate, to open a passage or cut a way through. A small body of roeloute and brave men, will sometimes, when surrounded or in difficulties, extricate itself from apparent captivity or destruction by opening or cutting a passage for themselves through superior force. The Roman history abounds many, and the British several instances of this nature.

To cut with, to cut the cord, to cut the pipe, to cut the pipe. See Bastion.

Cut-purse, in Law; if any person claim to sell or to let for sale, or to furnish to another, a cut-purse, or pic pocket, and a pocket, and the like, more than the value of twelve pence, it is felony excluded clergy. 8 Eliz. c. 4. 3 Inst. 68.

Cut-purse or saccularii were more severely punished than common thieves, by the Roman and Athenian laws.

Cut-roof. See Roof.

Cut-water, the sharp part of the head of a ship below the beam. It is so called because it cuts or divides the water before it comes to the bow, that it may not come too suddenly to the breadth of a ship, which would retard her. See Ships.

Cut-water, in Ornithology, the Sea-crow of Edwards, Black-skimmer of Latham, and Rynchops nigra of Gmelin; which see.

CUTACIUM, in Ancient Geography, a town of Asia, in Armenia.

CUTAMBULI, in Medicine, a name given by the old writers to certain worms bred under the skin, and causing by their creeping a very uneasiness sensation. Afterwards the same word was used to express certain uneasiness caused by a torpotic habit, and resembling the crawling of worms.

CUTANEOUS, from cutis, the skin, belonging or relating to the skin. Thus we say cutaneous diseases, cutaneous eruption, &c.

CUTANEOUS diseases, or eruptions, comprise all the variety of discolorations, spots, and excrescences, which arise on the skin, and which have obtained various appellations, according to the difference of their forms; such as pimples, pustules, vesicles, lumps, rheums, tubercles, &c. (which see respectively.) The modifications of these, again, confitute

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the different genera of cutaneous diseases; as the small-pox, measles, itch, leprosy, &c.; some of which are accompanied with fever, and complete the course in a stated time, and by regular stages; others, in much greater number, are chronic diseases, and are irregular and various both in appearance and duration. The chronic diseases of the skin are often tedious and difficult of cure; and the utility of the remedies, recommended by physicians and surgeons, has been considerably diminished by the inaccuracy with which the diseases have been described, so that medicines, which had been found efficacious in one form of disease, have been misapplied to others, and their efficacy denied. Many modern writers, indeed, have contested themselves with one or two general terms, such as scabrous, herpetic, and leprous, by which they have indiscriminately designated all cutaneous eruptions. So long as this inaccuracy of language is continued, little improvement can be expected in our knowledge of the nature and treatment of these diseases. It is fortunate, therefore, that we have now an arrangement of cutaneous diseases, in which each is considered according to its external character, as consisting of one or other of the simple forms above-mentioned, viz. of pimples, scales, &c. This arrangement was devised by Dr. Willan: the following is an outline of it.

Orders and Genera of Cutaneous Diseases.

Order I. Papule (Pimples.)

Genus.

Syphosphata (Red gum, tooth eruption, &c.)

Lichen (Spring eruption, scrobicular pimples, &c.)

Prurigo (Gratule, or universal itching of the skin.)

Order II. Squama (Scaly diseases.)

Lepra (Leprosy of the Greeks.)

Lepidophora (Dry or scaly tetter.)

Pityriasis (Dandriff.)

Ichthysis (Fish-skin.)

Order III. Exanthemata (Rash.)

Rubola (Measles.)

Scarlatina (Scarlet fever.)

Urticaria (Nettle rash.)

Rosacea (Rose rash.)

Psoriasis (Purple or scrobicular rash.)

Erythema (Red rash.)

Order IV. Bulbie (Large irregular Bladders.)

Erysipelas (St. Anthony's fire.)

Pemphigus (Vesicular fever.)

Pemphigus (Water-blebs.)

Order V. Vesicle (Vesicles.)

Herpes (Ring worm, blisters, wild fire, &c.)

Pustule (Chicken pox, and fow-pox.)

Sycosis (Cow-pox.)

Miliaria (Miliary eruptions.)

Eczema (Heat eruption.)

Abhita (Thrush.)

Order VI. Pustule (Pustules.)

Impetigo (Running tetter.)

Erythema (Large inflamed pustules.)

Varicola (Small pox.)

Scabits (Itch.)

Perring (Bad head, honey-comb-scalp, &c.)

Order VII. Tubercula (Tubercles.)

Phlyma (Boils, carbuncles, &c.)

Verruca (Warts.)

Molluscum (Small soft wens.)

Pustules (White smooth pustules.)

Acne (Stone pack, red tuberculated face, &c.)

Lupus (Or Noli me tangere.)

Ephedra (Arabian leprosy.)

Frambosa (Yaws.)

Order VIII. Macula.

Ephelis (Sun spots.)

Nervus

Spilus, Moles, and other original marks.

Every one of these genera is subdivided into species, so as to include all the modifications of cutaneous diseases.

There is a simplicity, and, comparatively speaking, a facility of discrimination, connected with this arrangement, as founded exclusively on external character, which renders it worthy to be studied; and it is only by the use of one common nomenclature, like this, that writers on diseases of the skin will be enabled to make themselves intelligible, or to understand each other. See each Genus in alphabetical order. See also Willan's Description and Treatment of Cutaneous Diseases.

CUTANEUS ULLI, in Mythology, a name given to the platymyrmoides.

CUTANEOUS NERVUS, in Neurology, is the name of the musculo-cutaneous nerve of the upper extremity.

CUTANEOUS NERVUS, is a superficial nerve of the upper extremity. See Nerve.

CUTH, in Geography, a territory of considerable extent in Hindoostan, situated in the S.E. of Sindy;—the eastern branch of the Indus separating the two countries. It extends along the northern coast of the Gulf of Cutch, and is separated from Guzerat by the Puddar river, or one of its branches. The present capital and residence of its rajah is Boogee-bogood, which see. Cutch is composed chiefly of hills, woods, and sandy wilds, but its interior part is very much unknown. The mouths of several rivers appear in the map of its coast; and the ancient maps describe the Puddar river as discharging itself into the Gulf of Cutch, through these openings. Major Rennell thinks it possible, that the river formed by the Coggar, and other streams, may discharge itself by one of these openings; unless it loses itself in the sand of the desert, which borders on the north of Cutch. On the S. coast of the Gulf of Cutch is a district inhabited by a piratical tribe, named "Sangarians," who cruise for merchant ships as far to the west as the Gulf of Persia. The capital of this state is Noonaugar; Bate or Baiz, and Aramroy, are its principal ports. The Ayin-Achar is a native of the founding of Noonaugar by a rajah, who was driven out of Cutch about 300 years ago; and says, that the territory in which it is situated is named "Little Cutch."

The province of Cutch, as well as the western parts of the peninsula of Guzerat, are governed by rajas of their own; and do not seem to have undergone much change by the late revolutions in Hindoostan. Cutch is not only a barren country, but in its nature too strong to be easily attacked. And the western part of Guzerat is mountainous and woody; and inhabited by a wild, hardy race; and therefore, on both accounts, unfavourable to the progress of a Mahatta army.

CUTHA, in Ancient Geography, a country of Asia, in Assyria. See Cush.

Cuthbert,
CUTHBERT, St., the 6th bishop of Durham, who died A.D. 686, in a hermitage upon the Farne islands, having resigned the bishopric of Lindisfarne, or Holy island, about two years before. His body was brought to Lindisfarne, where it is said to have remained until a defect of the Danes, about 763, when the monastery was nearly destroyed. The monks on this occasion fled to Scotland, with the relics of St. Cuthbert, which they deemed their chief treasure. Many fabulous stories are recorded with regard to the migrations and miracles of the body of this saint through various parts of Scotland and the north of England; at length, however, the saint is said to have chosen for his place of repose a site named Wardlaw or Wardlaw, in a forest called Dunbohle near Chester-le-Street, whither the bishop's fee had been transferred. It is said that the Northumbrian catholics keep secret the precise spot of the saint's sepulchre, which is only entrust to three perons at a time. When one dies, the survivors accompany them, is his room, a person judged fit to be the depository of so important a secret. The Entrenchi found among the rocks of Holy island, are denominated "St. Cuthbert's bed." While forming these beads he is supposed to sit during the night upon a certain rock, and use another as his anvil. This saint's legend contains many other stories no more probable.

Cuthbert's Beads, in Natural History; these Mr. Walcott has shown to be separated joints of the Entrochius, of which he has figured several in his "Petifications found near Bath," fig. 61. These abound in stone of the Bath free-zone flints, particularly in the stone-pits used for making the new road leading from King's-down to Bradford; whoro also puncheons, both smooth and fretted, high-waved cockles, and two other curious fossil shells (fig. 32 and 37.) are found in abundance.

Cuthbert, as in Ornithology. See Anas.

Cuthites. See Cush.

Cuticle, in Vegetable Anatomy. See Bark, Cortex, and Epidermis.

Cuticula, in Anatomy, is the inorganic, and insensitive covering, which universally invests the surface of the cutis, or true skin. See Skin.

Cuticular Glove, in the Phil. Trans., denotes a separation of the cuticle from the cutis, from the wrist to the finger-ends, &c. in the form of gloves, occasioned by a singular kind of fever. See the cauf and history related, ibid. vol. ix. N. 38. an. 1769.

Cutillie, or Cutilla, in Ancient Geography, a town of Italy, in the country of the Sabines, E. of Rome. It is spoken of by the ancients as a considerable city, famous for its fulphurous waters. This country, and that of Rome, were, according to Varro, the most elevated part of Italy, and called Umbilicium, or "the navel" of Italy. The town was situated on the banks of a lake called lacus Cutilenis. In this lake were floating islets, and Pliny relates that a kind of moving forest was observed in it. The waters were reckoned fulphurous, and used for fortifying the loach and nerves. Suetonius says, that the emperor Vespasian refided here during the summer, and according to Xiphilinus, this was the place in which he died.

Cutina, a town of Italy, in the country of the Velini.

Cutis, in Anatomy, is the strong, vascular, and sensible membrane; every where it covers the surface of the body, and constitutes the organ of touch: it is also called dermis and true skin. See Skin.

Cutler, a military artificer, whose business is to forge, temper, and mount all sorts of sword-blades.

Cutlerian Lectures, 1 lectures on mechanics founded in 1664 by Sir John Cutler, who appointed a salary of 50 l. a year, and fattled it upon Mr. Hoole for life; the president, council, and fellow of the royal society, being entrusted to appoint both the subject and number of the lectures.

Cutlery. Under this head we shall comprife the articles knives, forks, razors, and scissors. They are all either made of steel or of iron, with steel to form the edge.

Three kinds of steel are made use of in the manufacture of different articles of cutlery, viz. common steel, scarp-steel, and cut-and-steel; these different kinds are made from what is termed blistered steel, which has hitherto been obtained of good quality only from certain kinds of bar iron brought from Sweden and Ruflia.

The bar iron is smelted with powdered charcoal in a furnace termed a converting furnace, within a receptacle termed a pot, from 7 to 14 feet long, 3 feet broad, and 24 feet deep, the whole covered close up with a mixture of clay and sand, so as to prevent the access of atmospheric air. A strong heat is applied for about 8 days; as soon as the pot is cooled, which is in about 5 days more, the bars are taken out, and the iron is found to be converted into steel; it always appears blistered upon the surface, and hence is termed blistered steel. When these bars are taken to the tils, and drawn into rods of various dimensions, it is called common steel. All the cheaper cutlery are made of this steel, and also all kinds of forks.

When a number of bars of blistered steel are laid together, heated to a welding heat in a forge furnace, and drawn down into bars under a forge hammer, they constitute what is termed steel-steel. It has received this name from its being made use of to make wood fences. It is also termed Newcalk steel, from having been first made at that place.

Steel steel is exceedingly kind and tough. All the edge tools which require great tenacity without great hardnefs, are made of this, such as table-knives, fcythes, plane-iron, &c. It is also freer from flaws, which account of the welding heat which has been given to it.

Cut-steel is formed by melting blistered steel in covered crucibles, and pouring it into cast-iron moulds, so as to form it into ingots; these ingots are then taken to the tilts and drawn into rods of suitable dimensions. No other than cast-steel can assume a fine polish, and hence all the finer articles of cutlery are made of it, such as the finest scissors, pen-knives, razors, &c.

Formerly cast-steel could only be worked at a very low heat; it can now be made so hot as to be welded to iron with the greatest ease. Its use is consequently extended to making very superior kinds of chisels, plane-iron, &c.

Forging of Table Knives.

Two men are generally employed in the forging of table knives, one called the foreman or maker, and the other the striker.

The steel called common steel is employed in making the very common articles; but for the greatest part of table-knives which require a surface free from flaws, fcar-red steel is generally preferred. That part of the knife termed the blade, is first rudely formed and cut off. It is next welded to a rod of iron about 2 inches square, in such a manner as to leave as little of the iron part of the blade exposed as possible.
CUTLERY.

possible. A sufficient quantity of the iron now attached to the blade, is taken off from the rod to form the bolster, or shoulder and the tang.

In order to make the bolster of a given size, and to give it at the same time shape and neatness, it is introduced into a die, and a swage placed upon it; the swage has a few square blows given it by the striker. This die and swage are by the workmen called prints.

After the tangs and bolster are finished, the blade is heated a second time, and the foreman gives it its proper anvil smith; this operation is termed smithing. The blade is now heated red-hot and plunged perpendicularly into cold water. By this means it becomes hardened. Being thus hardened, it requires to be tempered regularly down to a blue colour; in this state it is ready for the grinder.

Forks are generally a distinct branch of manufacture from that of knives, and are purchased of the fork makers by the manufacturers of table knives, in a state fit for receiving the handles.

The rods of steel from which the forks are made, are about 2¾ lbs of an inch square. The tang and Shank of the fork are first roughly formed. The fork is then cut off, leaving at one end about one inch of the square part of the fork. This part is afterwards drawn out flat to about the length of the prongs. The Shank and tongue are then heated, and a proper form given to them by means of a die and swage. The prongs are afterwards formed at one blow by means of the flamp; this machine is very similar to that used in driving pins, but it is worked by one man. It consists of a large anvil fixed in a block of iron nearly on a level with the ground. To this anvil are attached two rods of iron of considerable thickness fixed 12 inches adunfer, perpendicularly to the anvil, and diagonally to each other. These are fastened to the ceiling. The hammer or flamp, about 100 lbs. in weight, having a groove on either side corresponding to the angles of the upright rods, is made to slide freely through its limited range, being conducted by its two iron supports. A rope is attached to the hammer which goes over a pulley on the floor of the room above, and comes down to the person who works the flamp: two corresponding dies are attached, one to the hammer, and the other to the anvil. That part of the fork intended to form the prongs, is heated to a pretty white heat and placed in the lower die, and the hammer containing the other die, is made to fall upon it from a height of about 7 or 8 feet. This forms the prongs and the middle part of the fork, leaving a very thin subflance of steel between each prong, which is afterwards cut out with an appropriate instrument called a file-pres. The forks are now annealed by surrounding a large mass of them with hot coals, so that the whole shall become red-hot. The fire is suffered gradually to die out, and the forks to cool without being disturbed. This process is intended to temper, and by that means to prepare them for filing. The inside of the prongs are then filed, after which they are bent into their proper form and hardened. When hardened, which is effected by heating them red-hot and plunging them into cold water, they are tempered by exposing them to the degree of heat at which grease inflammables.

Penknives are generally forged by a single hand with the hammer and the anvil finely. The hammer in this trade is generally light, not exceeding 3½ lbs. The breadth of the face, or the filing part, is about one inch, if broader it would not be convenient for filing so small an object. The principal anvil is about 5 inches, and 10 upon the face, and is provided with a groove into which a smaller anvil is wedged. The smaller anvil is about 2 inches square upon the face. The blade of the knife is first drawn out at the end of the rod of steel, and so much more is cut off along with it as is thought necessary to form the joint. The blade is then taken in a pair of tongs, and heated a second time to finish the joint part, and at the same time to form a temporary tang for the purpose of driving into a small shaft used by the grinder. Another heat is taken to give the blade a proper finish. The small recess called the nail hold, used in opening the knife, is made while it is still hot by means of a chisel, which is round on one side, and flat on the other.

Penknives are hardened by heating the blade red-hot and dipping them in water up to the shoulder. They are tempered by laying them side by side, with the back downwards upon a flat iron plate laid upon the fire where they are allowed to remain till they are of a brown or purple colour. The blades of pocket knives, and all that come under the denomination of spring knives, are made in the same way.

The forging of razors is performed by a foreman and striker as in making table knives.

They are generally made of cold-steel. The rods as they come from the till, each confining of an upright stem about 6 inches high, at the top of which projects a horizontal beak; one of these beaks is conical, and is used for extending the bow of the scissors. The other is a segment of a cylinder with the round side upwards containing a recess for giving a proper shape and smoothness to the inside of the bow.

The Shank of the scissors is first formed by means of one of the boffles, above described, leaving as much steel at the end as will form the blade. A hole is then punched about a ¼ inch in width a little above the Shank. The blade is drawn out and finished, and the scissors separated from the rod a little above the hole. It is heated a third time, and the small hole above mentioned is extended upon the back-iron so as to form the bow. This finishes the forging of scissors. They are promiscuously made in this way in any other guide than the eye, having no regard to their being in pairs. They are next annealed (for the purpose of filing such parts of them as cannot be ground) and afterwards pared.

The very large scissors are made partly of iron, the blades being of steel.

After the forging, the bow and joints, and such thaws as cannot be ground, are filed. The rivet hole is then bored, through which they are to be screwed or riveted together. The common kind of scissors are only hardened up to the joint. They are tempered down to a purple or blue colour. In this state they are taken to the grinder.
Grinding and polishing of Cutlery.

The various processes which come under this denomination are performed by machinery, moving in general by the power of the steam engine or a water wheel.

Grinding wheels or grinding mills are divided into a number of separate rooms; every room contains six places called troughs; each trough contains a convenience for running a grindstone and a polisher at the same time, which is generally occupied by a man and a boy.

Two of the above troughs are represented in Plate I. Cutlery A is a wooden wheel, called a drum, the axis of which runs through the whole length of the room. On the same axis are placed three other drums, one of the same length with the above, and two of half the length. Each of the large drums carries four flaps, which give motion to the two stones, &c., and to the polishers &c. by passing round their respective pulleys, &c.; d, d, d, are the places where the workmen fit, and as he fits aside for the purpose of leaning over the flume, the seat is termed a horse.

The buffers of the grinder is generally divided into three flanges, viz. grinding, glazing, and polishing.

The grinding is performed upon flumes of various qualities and sizes, depending on the articles to be ground. Those exposing much flat surface, such as saws, chisels, &c., require flumes of great diameter, while razors whose surface is concave require to be ground upon flumes of very small dimensions. Those articles which require a certain temper, which is the case with most cutting instruments, are mostly ground on a wet flume; for which purpose the flume hangs within the iron trough 11, filled with water to such a height that its surface may just touch the face of the flume.

In the manufactories of Sheffield not less than five various qualities of flume are employed. The most valuable of the five is termed the Wickerley flume, from its being brought from a village of that name, about nine miles east of Sheffield.

It is of the saddle-flume kind, rather firmly indurated, of a compact texture. It appears to consist of very hard flaky particles cemented together with a softer medium. Both in the wet and dry state, it cuts with great facility, and is particularly adapted for grinding razors, penknives, tables, and the like of the blade of scissors.

Another very useful flume is termed the whitening flume. It is of a blueish white colour, exceeding the Wickerley flume in its firmness and in cloveness of texture. It is particularly employed for grinding the outside of the blade of scissors, and other articles requiring great smoothness and neatness of shape.

Forks, and the shanks of scissors, are ground upon a dry flume, termed the fork-flume. It is a very sharp grit flume of a whiter colour, very similar to that of which mill-stones are formed. The flumes employed for grinding saws and files are of a similar quality with the fork-flume, of a yellowish grey colour.

It is necessary that the flumes move with a certain velocity, in order to produce a maximum of effect.

If the velocity be too great, two evils are generally to be expected: the first (which is most to be dreaded) is the breaking of the flume; the second is the flume almost ceasing to cut; this is also the case with drills, files, and other similar instruments; if they move too rapidly over the surface they are cutting, they generate much heat, but do not cut to well.

The surfaces of all flumes are contrived to move with about the same velocity. This is effected by means of different fixed pulleys. The drums above described are four feet in diameter, and make from 120 to 140 revolutions in a minute, and the pulley on the axis of the flume must be of such diameter as to cause the surface of the flume to move at the rate of from 600 to 700 feet per second.

We cannot wonder at the dreadful effects of the breaking of a flume when we consider the great velocity with which they move. The horse or feet of the workman projects over the centre of the flume, and is secured to a beam of wood on a level with the ground by means of a strong chain. This in some measure secures the workman from those pieces of the flume, which might be projected upwards against the under side of the horse. But as it is quite uncertain what direction the fractured parts may take, the above contrivance is only a partial defence against these shocking accidents. It sometimes happens that the chain is broken, and the man and horse together projected to a considerable distance.

Means have been recently adopted by some of the grinders to prevent, in a great measure, the breaking of flumes, which consist in a different method of fastening the flumes upon the axis. The old method consists in wedging on the flume by means of wooden wedges. The improved method is to secure the flumes to the axis by means of two circular plates, which are screwed firmly against the sides of the flume. By this means the parts of the flume are kept together. On the contrary, when the wedges are employed, a force is constantly exerted to break the flume; this effect is increased when the flume is used wet, from the circumstance of the wood absorbing moisture.

Glazing is a process following that of grinding: it consists in giving that degree of lustre and smoothness to an article which can be effected by means of emery of the various degrees of fineness. The tool on which the glazing is performed, is termed a glazer. It consists of a circular piece of wood, formed of a number of pieces in such a manner that its edge or face may always present the edgeway of the wood. Were it made otherwise the contraction of the parts would destroy its circular figure. It is fixed upon an iron axis similar to that of the flume; some glazers are covered on the face with leather, others with metal consisting of an alloy of lead and tin; the latter are termed caps. In others the wooden surface above is made use of. Some of the leather-faced glazers, such as are used for forks, table knives, edge tools, and all the coarser polished articles, are first coated with a solution of glue and then covered with emery.

The surfaces of the others are prepared for use by first turning the face very true, then filling it with small notches by means of a sharp-ended hammer, and finally filling up the interfaces with a compound of tallow and emery.

The pulley of the glazer is so much less than that of the flume, that its velocity is much less double, being in general at the surface that of 1500 feet in a second. The glazer and its pulley are seen at g and h.

The process of polishing, consists in giving the most perfect polish to the different articles. Nothing is subjected to this operation but what is made of cast iron, and has been previously hardened and tempered.

The polisher consists of a circular piece of wood covered with bull leather, the surface of which is covered from time to time, while in use, with the cresus of iron, called also co-leather of vitriol.

The polisher requires to run at a speed much short of that of the flume, or the glazer. Whatever may be its diameter, the surface must not move at a rate exceeding
Grinding of Table Knives.

The files made use of are from 35 to 45 inches in diameter, and about six inches broad upon the face. This file is a species of hand file, before termed the Wickersley file. It is first turned, or raised exceedingly true, and then notched upon the face with a sharp-edged tool to make it cut faster. This species of file cuts astonishingly fast, and has the peculiar property of not heating to a great degree any substance ground upon it. It is valuable on that account for grinding those articles which have been previously hardened. Table knives are ground first upon this file, and afterwards upon one of finer texture, called the whitening file. This prepares them for the glazing.

The glazer is about 20 inches diameter and 5 inches broad, covered on the face with thick leather. This leather is thinly coated with glue, and is rolled in a quantity of emery. As soon as the glue is set the glazer is fit for use. It runs upon an iron axis, in the same manner as the file. The bolster of the knife, when plane, is also ground and glazed in a similar way.

Forks.

The file on which forks are ground are from 18 to 24 inches in diameter and about 2½ inches broad. It is a very sharp grit, something harder than that last mentioned. The face of the file is a little rounded, for the purpose of meeting hollow parts, which are observed in all forks. The grinder holds the fork crosswise on the file, and very dexterously gives it a kind of circular motion; by this means he makes the flank very round. The flank and neck of the prongs are ground upon this file. The file being dry, a profusion of sparks is given out, and the fork becomes heated with the great friction, till it is blue. The prongs are afterwards ground upon a wet file, from 14 to 15 inches diameter and about 7 inches broad. The flank and neck of the prongs are finished upon a glazer of a similar shape to that of the file on which they are ground; this glazer is of wood covered with leather, and prepared upon the surface with glue and emery, in the same manner as that for table knives. The prongs are finished upon a glazer of the same materials, but flat upon the face, about 8 inches both in diameter and breadth. The infides of the prongs are dressed by means of thin leather strips about 2 inches broad and 15 inches long; they are first coated with glue and then covered over with emery: as soon as the glue is set the strip is introduced between the prongs of the fork, and is drawn backwards and forwards till the part becomes sufficiently clean.

Grinding of Penknives.

The file made use of for penknives is the Wickersley file, about 16 or 18 inches in diameter when new, and is worn down to about 9 or 10 inches; the breadth is about 4½ or 5 inches. This file, as has been before observed, having to little tendency to heat the substance ground upon it, is generally made use of for grinding penknives. There are several advantages in grinding upon the dry file. It does not wear so fast. The edges of the file are kept sharper and the surface evener: but the great advantage is, that the file cuts much faster. When the surface of a dry file becomes clogged with the particles of felt adhering to it, a piece of soft iron is always at hand, which being rubbed over it soon clears it of its incumbrance, and a fresh cutting surface is presented.

All the finer penknives, after being ground the first time, go back to be handled or hasted. The handles are wrapped in paper to keep them from being foled, and the knives thus hasted are again returned to the grinder. The blades are all slightly ground over again upon a file kept for the purpose of one determinant size. The flat parts of the blade are next ground upon a glazer or lap made of wood, and for common articles of wood. After the lap is turned perfectly true, and a number of notches are made in the face; the surface is rubbed over with emery and grease. If it is found to cut too keen it is slightly rubbed over with bees wax. This process would finish the common sort of knives, but the finer blades are afterwards polished upon the polisher already described.

Grinding of Razors.

Razors are generally ground upon the files which are laid aside by the grinders of penknives and scissors. They take them when about the diameter of 6 inches, and wear them down to 4 or 5 inches. These small files are highly proper for razors, in order to give to the blade a requisite degree of concavity and corresponding thinness to the edge. The razors are next glazed upon laps of metal, of a size corresponding with the size of the file, and afterwards polished upon a polished stone of wood covered with leather, similar to those used for penknives. The process of polishing, indeed, is always performed on the same kind of tool, differing only in size.

Grinding of Scissors.

The files made use of by the scissors-grinder are of two kinds; the one of the same size and quality with that used for penknives, and the other of the same nature with that used in the grinding of table-knives, and which the workmen term a whitening file. The first is employed to grind the inside of the blades; and the latter for grinding the outside. Scissors, the blades of which alone are hardened, are never sent to the grinder before they are hardened and tempered. After the blades of the scissors are ground they are returned to the maker, and are fitted and screwed together; and are properly adjusted for cutting. This being done, they are taken to 9 eases and returned to the grinder. The scissors being slightly ground over again are finished upon their appropriate glazer. The infides of the blades, and all the other parts which are not rounded, are glazed upon a glazer of metal, of a size corresponding to the file on which they were ground; for the interior article the glazer is of wood.

When the flanks of scissors are sufficiently plane to admit of grinding, they are sent to the hank-grinder, a workman solely employed in grinding the flanks and in dressing those parts of the scissors which have been filed, and which cannot be touched by the glazer.

The flanks of larger and commoner sorts of scissors are ground upon a file similar to that used for grinding the flanks of forks, but the finer kinds are ground upon the Wickersley file already described. Being ground, they are glazed upon a glazer of wood faced with leather, of the same size and shape with the flank of the scissors. The remaining parts of the scissors, which have been only filed and rubbed with sand but are still deficient in polish, are finished by brushing.

The bristle is a instrument consisting of a circular piece of wood set upon the face with very hard bristles. Two brushes are generally employed in succession. The first is
is made use of with great effect on tools. It is used with crocus and water to give the proper finish to the surface. If the blades of the scissors are required to be polished, which is frequently the case, they are again sent to the first grinder, who polishes them upon a polisher similar to those described for razors and penknives. It will be here proper to remark that the thanks of the above kinds of scissors, being soft, cannot assume the polish with crocus, as nothing but half steel in the hardened state is susceptible of that peculiar lustre. An imitation of polishing is, however, given to the foils thanks by means of a burnisher of polished hardened steel.

The more delicate and finer sorts of scissors, in order to render all the parts susceptible of polishing, are hardened quite up to the bow, in consequence of which the order of manufacturing is a little varied, from that of the scissors having soft thanks. After being forged, filed, and having the hole drilled for the screw, the inlines of the blades are ground, and they are fitted and screwed together. They have next to be hardened and tempered, and as it is a common property of steel to warp during that process, the two sides of the scissors are firmly bound together by means of iron wire. The screw being withdrawn, which would be liable to be hardened along with the scissors, they are heated red-hot all over, and immerged in water up to the bow.

After being thus hardened they are heated, for the purpose of tempering them till the blades appear of a purple and the thanks of a blue colour. The wire is then taken off, and the scissors are finished by processes similar to those above described, with the difference of the thanks being polished with crocus along with the blades. After the scissors return the last time from the grinder they only require to be sharpened, wiped clean and screwed together. Previous to wiping, however, they are generally put into pulverized quick-time, which greatly tends to the preservation of their lustre by absorbing the moisture from the surface; the presence of which is well known to facilitate the rusting of polished steel.

Some of the very fine scissors are elegantly and variously ornamented. Formerly they used to be ornamented with fluids of gold or polished steel, arranged round the joint of the scissors or along the thanks.

The fluids are each furnished with a small tang, by which they are inserted into small holes made in the scissors. The holes are made while the scissors are soft, and the fluids are inserted after the scissors are polished.

More recently the same parts are laid with circular bits of gold, which are polished along with the scissors and afterwards ornamented on the surface by engraving. Scissors are also ornamented by means of gilding, bluing, and etching. The gilding is performed in two ways; the first by dipping the finished article into a solution of muriate of gold in alcohol; the second with metallic gold laid on by means of heat. The first kind of gilding has been rejected on account of its want of permanency. The second, though very durable, is objectionable on account of the heat employed in the process, which is so great as to make the scissors too soft.

Various devices, such as letters, coats of arms, &c. are sometimes put upon scissors, but more frequently upon razors and swords, by means of etching. The figures are drawn upon the polished surface with a varnish, made by diffusing resin in oil of turpentine. Every other part of the articles is covered with the same varnish, excepting what is to form the ground of the picture. The expoed part is then covered with dilute nitric acid, which is sufficient to remove upon it till it is lopped off to be sufficiently corroded. It is then rinsed in water to take away the acid, and the varnish is removed by means of oil of turpentine. The ground of the picture appears of a dead white, while the figure, and other parts of the article, display their original polish.

Cutlery made of Pig-Iron.

Great quantities of various kinds of cutlery have been made of pig-iron, by means of casting, particularly forks and scissors. The models are made of lead, alloyed with a little antimony. The articles are cast in found, in flats similar to those used in casting small articles of brass. The metal employed is of that sort of pig-iron known by the name of N° 1, from the large quantity of carbon contained in it. It fuses at a lower temperature, and becoming more liquid on that account, it is the only kind which can be used for small articles.

The metal is fused in crucibles of Stourbridge clay, in the common air furnace employed in iron foundries. The articles, when cast, are all nearly brittle as glass. This, in a great measure, is occasioned by the moisture in the sand, which effects this change upon the metal in a manner similar to that by which steel becomes hardened. In order to obviate this hardness the castings are cemented with ashes or sand, for the purpose of annealing them. Cast-iron pots of a cylindrical shape are employed for this purpose. They are about 12 inches diameter, and about the same depth. A number of these pots are filled nearly to the top with the sands to be annealed; a quantity of fine sand or ashes is then employed to fill up the interstices, and to cover them completely, so as to exclude the air. The pots are placed in a furnace, and are surrounded with small coals, for the sake of carrying on flue combustion. They are heated very gradually to a temperature little short of fusion, and they are as gradually allowed to cool. The whole time occupied in heating and cooling is from 24 to 30 hours. They are found, after this process, to have become very soft, and to be capable of bending a little without breaking. They afterwards are finished in a manner similar to those which are forged, with the exception that they are not hardened and tempered; were they subjected to that process, they would return to the same flate as before annealing.

Notwithstanding the great demand which has been for cast cutlery, on account of their very low price, they are not completely deficient of utility, that ultimately they cannot fail to disgrace both the mercant and manufacturer. If a preference can be given to any of them, it is in favour of the scissors. The knives and forks are not only liable to break, but they soon turn black, and can be very little improved by the common mode of clearing, as by the belt means they are only susceptible of a miserable polish.

Various attempts have been made with a view to improve the cast cutlery, the most successful of which is by Mr. Lucas of Sheffield, and for his method he some time ago obtained a patent. By Mr. Lucas's process, the cast metal articles are converted from their brittle and crude state into malleable iron or steel at pleasure, without injuring the surface, or distorting the figure of the article. Nails of various kinds have been made in this way, more flexible and equally tenacious with those of wrought iron. This method conficts in finishing the articles, in pots similar to those employed for annealing, with an oxide of iron. Calcined iron-dust pulverized was first made use of, but was found to make the surface of the metal too rough as to render those articles useful. This inconvenience was in some measure obviated by laying a thin
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...thin stratum of sand between the metal and oxyd of iron. Any port of earth, containing a portion of the oxyd of iron, is capable of bringing about this change. The red sand which abounds in some countries, or loam, or clay, containing oxyd of iron, would answer very well. The theory of this process is obvious. The cast-iron consists of iron and charcoal, or carbon; and it is to the presence of the carbon that we attribute the peculiar qualities of cast-iron different from those of a malleable iron and steel. The oxyd of iron, with which the cast-iron articles are by the manufacturers termed round tongs. The other kind of handle consists of two sides, which, when laid on each side of the tang, and paired together, form the handle. The two sides are termed scales, and knives of this kind are called Scales.

Iron handles are the most valuable, and in the greatest esteem. The greatest part of them is made in the round tongs. These are of various patterns, such as octagon, oval, and fluted. The octagon and oval handles are hied into the intended form, and afterwards rubbed with a fine sand and water, and afterwards with powdered chalk and water. The fluting of the handles is performed by means of a sharp tool of the aulering kind, having the figure of the flutes upon its face.

The tongs are cemented into the handles with rosin mixed with whitening. A very convenient and durable handle is made of flag horn. The round parts of the horn which are of proper thickness are selected for the round tongs. The outside parts of the horn are cut into scales, which make the flat tanged handles. The surfaces of the flag-horn handles are invariably left in their natural state.

The small end of the ox-horn, termed the tip, is generally employed for making the handles of table knives. The tips are formed into hafts of a great variety of patterns, by means of prefling between two dies. This advantage is obtained from the well known property of horn being so soft and ductile when hot, as to admit of considerable extension. The dies employed for prefling the horn are represented in fig. 2. A and B, the upper and lower dies, are made to form the bits of a pair of tongs, on the even faces of which the exact figure of the handles is formed, as represented in the figure.

The pieces of horn intended to be prefled are first softened in hot water, and then cut to the size deemed requisite exactly to fill the mould. The dies are heated to the temperature of about 1000° Fahrenheit, or something short of the heat required to burn oil. The horn, with a little oil, is then laid between the dies, which are placed in the prefling press, fig. 3, consisting of a compound lever, acting with a screw at A, and turning round the handle B, similar to the common press. The force required to be given at the handle is not more than what a man may perform with ease. The motion being now reversed, the tongs are withdrawn, and the horn is found to have received the full impression of the die.

If the handles are plain, and the horn be native black, the first prefling is sufficient; if, however, they are not sufficiently black, they are dyed after the first prefling in a liquid, containing logwood and green vitriol. The process of dyeing takes off that smooth glossy surface given by the dies, which is removed by prefling them a second time in dies a little less than those employed for the first prefling. If the handles require to be fluted, or otherwise ornamented, they are prefled a second time in dies containing the intended figure.

The above handles, after they come from the press, require only to have blades inserted, and to be polished by means of rotten stone or chalk and oil.

The handles of bone are made from the flank of the ox. The thickness of the solid parts of the bone is never sufficient to make the handles equally thick with those of ivory. Some of the bones are very dense and hard, but can always be distinguished from ivory by the colour. Such handles, in order to correct their defect in colour, are dyed green in liquid, consisting of the oxyd of copper dissolved in aqua ammonia. The handle of the horns, being the cheapest preparation of ammonia, is always used. The proportions are about seven ounces of the oxyd of copper to one gallon of hart-horn.

After dyeing, the blades are cemented into the handles, which are afterwards polished. When the dye does not contain any substance capable of ruin the blade, the handles are dyed after the blades are inserted.

Various kinds of wood are employed in making the handles of table knives. The very common articles have handles of birch wood, which are expeditiously made by being turned in an oval lathe. They are afterwards dyed black or red. After this they only require the blades to be put into them, and to be burnish'd with a smooth hone, termed blood-planes. A superior kind of wood handles are made of various foreign woods, such as lignum vitae, ebony, &c. Handles are sometimes made of very thin silver in the sheet, and of plated copper. The thin metallic shells, which form the outside of the handle, are made in two halves, being forced into a steel die, by means of a screw; the two sides are afterwards fastened together, and the hollow part filled up with a cement of gold and pulverized brick. The cement serves to give firmness to the thin metal of metal, and at the same time to secure the blade.

Handling of Penskives.

The handles of penskives in general consist of three parts, viz. the outer scales, the inner scales, and the spring. The outer scales, which are only ornamental to the knife, are made of various substances, such as horn, flag-horn, ivory, bone, tortoise-shell, and pearl. The two latter substances are employed for the most valuable knives. The beautiful variegated horn stands the next in estimation. But the most durable scales are made of flag-horn.

The inner scales, which serve to give firmness and durability...
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bility to the knife, and to which the outer scales are attached, are made of iron, brass, and sometimes of silver; the ends of the inner scales intended to receive the blade are in general made thicker, and is termed the bolster of the knife. The scales of those knives having no bolsters are cut out of thin plates of the metal of which they are made. Iron scales with bolsters are forged with the hammer.

The spring is of steel, running along the back (and in single blade knives round the end) of the handle, and serves to separate the scales from each other; and by its elasticity exerted upon the tang of the blade, it secures the knife in the situations of being shut or open. The inner scales and the spring being forged, and the outer scales being provided, they are put into the hand of a workman, who finishes the whole of the handling department.

His tools consist of a vice, a small anvil, and hammer, a variety of files, file burnishers, a break-plate, drill-bow, and drills of various kinds; a glazer coated on the face with emery and glue, to polish the different parts; and a buff, which is an instrument similar to a glazer; but instead of being coated with emery and glue, it is used with oil, and fine sand, and rotten-flone. It is employed to polish the surface of the outer scales. The buff and the glazer are turned by the foot, in a manner similar to that of the common flret-grinder. He is also provided with a number of hardened steel plates, about one-twelfth of an inch thick, and in shape corresponding to the different patterns of the handles: each plate contains holes in situations answering to the holes in the handle, by which the spring and blade are secured in their places. The inner scales are each secured to one of the plates above, for the sake of drilling holes through them opposite to the holes in the plate. The scales are then fastened on each side of the plate by temporary pins, and the edges are filed down to the plate. By this means the handles are made exactly of the pattern required. The spring is next drilled, placed between the scales, and secured in its proper situation by temporary pins, till it is filed quite level with the edges of the scales. A hole being drilled through the tang of the blade, one of the above pins is taken out, and the spring thrown back, to allow the blade to pass between the bolsters, in which situation it is fastened by means of a temporary pin. The tang is then filed square, to correspond with the bolster and the spring.

The blade, the spring and the scale being properly adjusted to each other, the different parts are separated by taking out the pins.

All the visible parts of the spring are next filed smooth, and the spring bent a little inwards, for the sake of giving it greater power when placed in its intended situation. The spring is then hardened, by heating it red-hot and immersing it in water; it is afterwards tempered, by rubbing it over with gravel, and heating it till the gravel inflames: the visible parts being glazed and burnished, the spring is deemed finished.

Our next process is to place the outer scales of horn or other substance upon the inner scales.

Scales of horn or tortoise-shell are heated, and exposed while warm to the action of a ferret-prefs, for the purpose of making them flat.

The scales are then made of uniform thickness, by means of filing. In the next place, the shield of tin or silver is introduced.

As this is a process of some ingenuity, at least so far as concerns the forming a recess for the different shaped shields, we shall describe the tools employed, with the assistance of the following figures.

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tended for prfidding are in the procfs sometimes extended as much as two inches.

The handles of prfled horn are divided into three varieties, &c. the native black, confiding of horn which is black previous to being prfled; thofe of the fcond variety are fuch as are dyed black, or other colour, after being prfled and handles of the third kind are thofe defined for mock shell, for which the moft clear and colourlfs scales are fected.

Thoie of the firft kind, after prfidding, retain their native black, and are much esteemed for their permanent colour. The scales, which are partially coloured, are generally dyed black with a dye made of logwood and sulphat of iron; fome are dyed red, and others green. The former are dyed with archill, and the latter with indigo diffolved in the sulphuric acid.

The imitation of tortoife-shell is performed by a procfs called fpottinf, which confids in the application of a compofition to the surface of the horn, by which it becomes irregu larly coloured.

The compofition consists of one part of minium, four parts of common pot-ash, and ten parts of quick-lime; as much water is added as will give it a pulpy confiftence. It is then laid upon the upper surface of the fcale with a fick as cere lefly as po alfible, and is spread thicker in fome parts than in others, for the purpofe of giving a variety of shades. The fubftance is allowed to remain upon the surface for fix or eight hours; and the latter part of the time they are placed before the fire. After the compofition is removed, the furface exhibits a striking imitation of tortoife shell. The fingu lar effect of this fubftance is evidently the refult of some chemical change. The lime appears to answer two pur pofes: it takes the carbonic acid from the pot-ash, and at the fame time ferves to give a proper confiftence to the mafs. The lead and the pure pot-ash together are effential to producing the effect; though, when feparately applied, no change is obferved. The fact is, that the colour is produced by the diffolved oxyd of lead in the alkalii. A colourlfs folution of this kind may be advantageoufly used for the fpottinf of horn. May not this compofition be found of ufe in giving colour to other animal fubftances, fuch as hair, leather, &c.?

The handles of razors are frequently ornamented by means of fcales of various figures, fome of which are of filver, others of yellow metal, and of an alloy formed of lead and tin. The silver and yellow metal fcales are prfled into the fubftance of the horn by means of a pref similar to a fly-pref. The fcale and the fhide are placed between the two dies of a figure correponding with the shape of the fcale, the dies being previously heated to a temperature fomewhat fhort of that employed in the firft prfidding. A fufficient force is then exerted upon the fcrew to force the metal into the horn. Figures, letters, and other ornaments, are introduced by the fame method.

The fcales of lead and tin are put in by firft making in the fcales a proper recess, by means of the fpring-drill de scribed in fgs. 2, and 3., and afterwards filling it with the melted metal. The greatest number of fcales are of this kind.

The handles of pearl, ivory, &c. which cannot be made by prfidding, have the proper shape given to them by means of the fife. The fides are then introduced by firft making the proper recess with the fpring-drill, and afterwards fc ening the fhide by means of rivetting, but more com pletely by the following method. After the fhide is cut out to its proper shape, it is made concave on one fide, and convex on the other; at the fame time the edge is a little bevelled towards the convex furface. The cutting part of the fpring must be fo formed as to make the bottom of the recesses to receive the fhide a little larger than at the top. The fhide being then introduced with the concave fide downwards, and hammered upon the convex fide, becomes firmly secured.

The fcales of the handle in the flate already defcribed are now fit for the reception of the blade. A piece of white metal, an alloy of lead and tin, called the bead, is next placed between the fcales at one end, to allow the blade to go between when the razor is fhot; the blade is then fcrewed in its place, and the fcales falfened together by means of rivets, which are of iron, bras, and fometimeis of filver. Zinc wire has been recently used for the purpofe, and receives a good polish. The handles of razors in the flate left by the pref and the file are firft fcofwered with fiind and water, and afterwards polished upon a buff.

A superior kind of fine cutlery is manufactured in Lon don, chiefly by the surgical instrument-makers; the excel lence of which consists in the great attention paid to its fabrication; the quality of the fteel, and above all to the reafeines of the feveral temperatures under which it is hardened, and the reduction of this by the procfs called tempering.

The imitation these articles are held in, allows the ma nufacturer to employ the superior workmen, and also to rejeft, during any part of the procfs of manufacture, fuch articles as from slight flaws, cracks, or even any inferior quality in the fteel, may be objectionable.

The procfs of the manufacture differs also from the cir cumstance of the fame workman beginning and completing the article. Engines and complicated machinery are never used: therefore his skill and abilities being exer ted, greater perfection is obtained. The hardening of fteel depending on the quick abftration of the heat given, different me diums are made ufe of, as quicksilver, water, oil, &c. The tempering, or reduction of the hardening, is not governed by the colour only, but by a more accurate method (pro ved by Hartley); the exact variations of temper are given in a fluid, into which a Fahrenheet's thermometer graduated to the boiling point of mercury is imme rfed, and the delicacy of this operation may be sufficiently understood, from the various colours produced on the fteel, at the various temperatures shewn by the thermometer. The change of fcale takes place at 430, and finishes at nearly 650. Nine changes of colour are observable at about 20 degrees dis tance of each other, viz.

430. Slight colour inclining to yellow.
450. Straw colour, pale.
470. Yellow.
530. Purple.
550. Bright blue.
560. Blue.
600. Blackish blue inclined to scale or oxyd.

From 430 to 470 is chiefly employed for razors, and some of the finer edged surgical instruments.
470 and 490 for pene knives, and some pointed in struments.
From 510 to 550 includes pocket-knives, table-knives, carvers, flifeors, &c. &c.

The experience of the workman is much required, and also a knowledge for what purpose the edge is to be employed, during thefe three ranges of temperature.

550 and 560 Spring temper.
The operation of setting an edged instrument, is the giving it a more permanent, or lasting edge, by means of a hone, or any other fine cutting stone. Every article is left from the wheel with a thin wiry or notched edge. This must be removed, and one substituted at an angular form; the more obtuse the angle, the stronger the edge, and vice versa. This angular edge is obtained in several ways; sometimes by the thickness of the back of the instrument, but more generally by the elevation of the back from the stone.

Razors are set upon a stone brought from Germany. Their backs being thick, they are laid perfectly flat, and rubbed backward and forward on each of their sides, till the wire or notched edge gives place to a fine smooth one. The use of a small quantity of oil on the surface of the stone is requisite.

Pencils are set upon a stone brought from Turkey, and from its property of absorbing oil, it is called an oil-stone. They are held at an elevation of the back just sufficient to keep it from touching the stone; and the greatest attention is here requisite, to give them the same exact elevation, during the removal of the wire edge. They have also a few strokes given them as a finish, upon a hard kind of green stone.

Scissors are set upon the oil-stone; they are held nearly upright, that their edges may be turned toward their inner side.

Pocket-knives, carving, and table-knives, are set at an elevation, upon a stone, called a rag-stone, of a fine sandy texture, and without the use of oil.

CUTRIGURI, in Ancient Geography, a people who inhabited the district adjoining to the Palus-Mozotis; and formed a part of the Huns.

CUTTABUNK, in Geography, one of the Elizabeth islands, which see.

CUTTER, in Sea Language, denotes a small vessel commonly navigated in the English Channel, furnished with one mast, and rigged as a sloop. Many of these are used in an illicit trade; and others employed, under the direction of the admiralty or custom-house, by government to seize them.

Cutter is also the name of a small boat belonging to ships of war. It is broader, deeper, and shorter than the barge or pinassie: fitter for fishing; and usually employed in carrying stores, provisons, &c. to and from the ship. Clincher-work is used in the structure of these boats.

Cutter of the tallies, an officer of the exchequer, who provided wood for the tallies, and cut the fun paid upon them. See TALLY.

CUTTER, in Mechanics, is a circular piece of well tempered steel, varying in diameter, from the dimensions of a shilling, to the size of a crown-piece, and having notches cut on its edge generally of the shape of saw-teeth, but sometimes finer, like the indentations of a coarse file; when fixed, by means of a central hole, on the revolving arbour of an engine for cutting the teeth of a wheel, it forms the spaces between the teeth of a breadth equal to its own thickness, and when its sides are flat the space so formed is a small parallelogram, pointing to the centre of the wheel. It is therefore necessary that every engine should have a variety of cutters, differing in thicknesses as well as shape, to form the teeth of wheels, that require different degrees of strength, and forms adapted to particular purposes. The reader will see in our subjoined account of Cutting-Engine, a reference to the plates in which some of the variety of cutters may be seen both in a detached state, and also attached to the engine of which they form a constituent part.

Cutter-gauge is a contrivance for ascertaining and expressing the exact thicknees of a cutter, such as is described in our preceding article. The workman who is in the constant habit of using a cutting engine will, indeed, generally guess what cutter is proper for any wheel, of which he knows the diameter and number of teeth wanted, particularly when it is of ordinary dimensions; but still it is necessary to verify his conjecture, by a previous partial trial on a piece of ulefs metal of similar radius, or by marking only with the cutter, or a marking knife, the edge of the wheel itself, till he is satisfied that the teeth and spaces, when cut of the requisite depth, will be reciprocally of due dimensions. To avoid such previous trial, Mr. Robert Hynam of St. Peterburgh invented an instrument for gauging and expressing the thicknees of cutters, which was laid before the Society of Arts at the Adelphi, and honoured with a reward. [See vol. xii. of their Transactions, 1790.] The instrument here alluded to manifests considerable ingenuity, but in our opinion is too complex and expensive to become of general use. An ordinary wire-gauge, or plate of steel with notches, having parallel sides of various dimensions, would, we think, be found equally serviceable in practice. The method is simply this: when the wheel is ready for cutting, describe a circle on its plane to represent the pitch-line, more or less distant from its extreme edge, accordingly as the teeth are to be fine or coarse, and measure the diameter of this circle in inches and tenths of an inch, for the practical diameter of the wheel; in the next place, multiply this diameter by $\frac{1}{14}10$, or otherwise multiply it by 22, and divide the product by 7, and the inches thus obtained will be the circumference of the pitch-line of the wheel, by which, if the number of teeth proposed for the wheel be divided, the result will be the number of teeth per inch that the wheel is to be cut into; but as there are as many spaces as teeth in every wheel, it must be reckoned, that both a tooth and a space go in this calculation for one tooth only: hence, when the teeth and spaces are respectively of equal dimensions, the cutter that makes the space ought to be only one half of the calculated dimensions; that is, a wheel found to be of fix inches circumference at the pitch-line, in order to be cut into sixty teeth, or ten per inch, will require a cutter of only one twentieth of an inch thick, to make the tooth and space equal to each other. Suppose now the gauge-plate to have a dozen notches, of $\frac{1}{4}$th, $\frac{1}{4}$th, $\frac{1}{4}$th, $\frac{1}{4}$th, &c. up to $\frac{1}{4}$th of an inch breadth respectively; these notches will be proper gauges for cutters to use for 5, 6, 7, &c. up to 17 teeth per inch, on a supposition that the plane of the cutter is precisely at right angles to the arbor on which it revolves in action; but as it is found in practice, that most cutters, however carefully made, cut notches or spaces broader than the thicknees of the cutter, particularly when the cutter has been newly sharpened, it may be a necessary precaution, after the cutter, chosen by the gauge, has formed one space in the wheel, to compare that space with the gauge rather than the cutter itself, as determined by calculation of the wheel’s diameter, and requisite number of teeth, taken conjointly. In this way a suitable cutter for any practical number of teeth in a given wheel may be readily determined without previous trial. In those cases, however, where it is deemed desirable to have the teeth larger than the spaces in any wheel, its felloe, or corresponding wheel of the pair, must have its
teeth smaller than the spaces; so that one of the two wheels must be cut with a cutter thicker than a mean cutter and the other with one thinner. We have given a table of diameters in our article Clock-making, where the workman will find the various dimensions and corresponding number of teeth per inch already calculated for him, which therefore he may take by inspection, and choose his cutters, according to (as we have there directed in the use of the table) by the mere help of his gauge-plate, or even without, provided the cutters once gauged were marked agreeably to the number of teeth per inch they have been gauged for; and also provided the original thickens of the cutting part be not altered by the act of sharpening.

CUTTERS, a term with Miners, for joints or partings in a vertical direction, or nearly, between the different blocks of coal, as they lie in the seam; these are crooked again, nearly at right angles, by other vertical joints called backs, and these together much facilitate the getting of the coal in a mine.

CUT-TER, in Geography, formerly a town, now a ruined village of Hindoo plans, in the country of Oude; remarkable for being the scene of the decisive battle of 1754, in which Sujah Dowla defeated the Rohillas, by which action the fate of that brave people was determined; for Haftez-Rhanut, their chief, was slain, and our army penetrated their country as far as Loll Dong at the foot of the mountain. This place is now a motley assemblage of ruinous mud houfes, not a tenth part of which are inhabited: 20 miles S.S.E. of Bereilly.

CUTTING, a term used in various fenses, and various arts; in the general it implies a division or separation.

Cutting, in Cogage. When the lamine, or plates of the metal, be it gold, silver, or copper, are brought to the thickens of the species to be coined, pieces are cut out of the thickens, and nearly of the weight, of the intended coin; which are now called planebets, till the king's image hath been flamped on them. The instrument wherewith they cut, consists of two pieces of steel, sharp, and placed over one another; the lower a little hollow, representing a mortar, the other a pestle. The metal put between the two, is cut out in the manner described under Coinage.

Note. Medallions, where the relievo is to be great, are not cut but cast, or moulded.

Cutting is particularly used in Heraldry, where the shield is divided into two equal parts, from right to left, parallel to the horizon, or in the fife-way.

The word is also applied to the honourable ordinaries, and even to animals and moveables, when they are divided equally the same way; fo, however, as that one moiety is colour, the other metal. The ordinaries are said to be cut, couped, when they do not come full to the extremities of the shield.

Cutting, in the Manage, is when the horse's feet interfere; or when with the shoe of one foot he beats off the skin from the joint of another foot.

The part most frequently bruised is the side of the fetlock joint, where the toe of the hoof is turned out, the inner quarters of the shoe or hoof are more frequently the parts that do the mischief; but when the toe is turned in, the injury is done by the anterior part of the shoe. If the toe is turned out, the inner quarter of the crust is most frequently lower than the outer. This condition of the hoof necessarily inclines the fetlock joint of the foot that supports the weight, nearer to the foot in motion. Farriers, says Mr. Coleman, in his "Observations on the Structure, &c. of the Foot of the Horse" (vol. i.) generally attend to the hoof that cuts, and not to the hoof of the injured leg; but while the leg is in the air, no shoe can alter its direction; and the small quantity of horn, or iron, that can be removed from the hoof and shoe, very rarely prevents cutting. But it is very practicable to alter the position of the leg, that supports the animal; and thus the foot in motion may preserve the same direction without being liable to cut. The outer quarter of the crust should be lowered, and the inner quarter preferred. This operation will tend to make the bottom of the hoof the reverse of its former state, that is, the inside quarter higher than the outside, and this will throw the fetlock joints farther from each other. Where the sole is thin, very little of the crust can be removed from the outside; and thus it will be necessary to attend to the shoe. The inner quarter should be thickened, and the outer quarter made thin, which will produce the fame effect, as altering the horn; or, if the hoof be sufficiently strong, both these remedies may be applied at the same time.

When the toe inclines inward, says Mr. White, in his "Compendium of the Veterinary Art" (vol. i.), it renders a horse liable to cut on the inside of the knee, at the lower part of the joint; this is sometimes termed the "speedy cut," from its happening upon the trot or gallop, and is confidered as a dangerous failing in a horse:—the pain occasioned by it sometimes causing him to fall very suddenly. The remedy for this is to keep the toe as short as possible, that being the part which inflicts the wound, and to alter the improper position of the foot. Cutting frequently depends upon weakenss or fatigue, and is therefore liable to happen to young horses when rode very hard over deep heavy ground. The only remedy in this case is to avoid the cause till the legs acquire more strength, and to protect the wounded part with leather, or a boot, as it is termed. Whenever a horse cuts, it is desirable to ascertain what part it is that inflicts the wound; and this may be often done by applying tar to the wounded part, which of course will adhere to the part of the hoof or shoe that comes in contact with the wound.

Cutting, in Surgery, denotes the operation of extracting the stone out of the bladder by force. See Lithotomy.


Cutting-Engine, in Mechanics, is the name of an engine, which divides and cuts a wheel, pinion, or rack, into any assigned number of teeth, which office it performs both with accuracy and expedition. While the art of constructing wheel-work was yet in its rude state, the dividing of a wheel into the requisite number of circular parts, and cutting away the notches or spaces by a manual operation with a file, was not only a tedious but an imperfect way of proceeding, which left such inequalities in the size and shape of the tooth, as were but ill fitted to transmit any applied force in an equable manner, or to perpetuate the duration of the parts once made. To facilitate such manual operation by a file, the simple platform was invented, described by father Alexander, in his book on clock-making, which was a circular plate of brass, from ten inches to a foot, or more, in diameter, with as many concentric circles therein, as the usual numbers of teeth in the wheels and pinions of clock-work required to be divided into corresponding parts of a circle. In the centre of this platform was fixed a flern, or fall arbor, round which an alidade, ruler, or index, with a straight edge, pointing to the centre, turned freely into any
any given point of a required circle, by means of which the
divisions of any given circle were transferred to a wheel,
placed on the said item under the said index, by a marking
point. This mode of dividing a wheel is still imitated by the
 enamellers and engravers of clock-faces, and is certainly
an easy way of transferring divisions from a larger to a
smaller circle for various purposes, where the accuracy of
an astronomical instrument is not required; but still the
spaces were required to be cut by hand with a file; at
length a little frame was mounted on the index, which was
divided to direct and combine the file in such a way as to
cut the notches of a wheel, placed over the index, with
left deviation from the truth than could be managed by
mere manual dexterity; this addition, of doubt, led to the
adoption of a circular file, or cutter, and of such other
apparatus as completed the construction of a simple cut-
ing-engine; and it is attested ("Les Etres Chronometriques"
par. M. le Roy) that Dr. Hook was the first person who
contrived such an arrangement, as could merit the name of
a cutting-engine, [machine a fendre.] The doctor's in-
vention, which, like many other of his inventions, has
proved to be of permanent and great utility in mechanics,
confined on an entire tranfmutation of the old stationary
platform, with its moveable appendages, into a moveable
platform inserted into a strong metallic frame with stationary
and additional appendages; the machine thus converted
into an engine, or fall-acting piece of mechanism, confined
of the strong frame; the sliding supporting bars of the
platform, or plate, with an horizontal screw of adjustment
for distance from the circular file; the divided plate with a
revolving arbor to receive the wheel to be cut; and the
alidade fixed to the great frame, in the position of a tan-
gent line to any of the divided circles, and applying its
bent and rounded point to the punched marks of division on
the circle succeffively, as the plate revolved, in the act of
cutting the successive teeth of a wheel. This construction
of the engine is very nearly the fame that remains in the
tool shops of the present day. The original divisions of the
circles, viz. 360, 300, 150, 90, 60, &c. are all retained
in the ordinary engines, though many of the smaller
numbers are included in the larger ones, and are therefore
superfluous; for taking every fourth hole of 360, is the fame
as using the circle of 90, or every fifth the same as using
the circle of 60; also taking every other hole of 300 is
the same as using the circle of 150. As these ordinary
engines are not limited in their operations by reason of
their powers extending only to the numbers marked on
the divided circles; and as the prime numbers are not
usually inserted, we find that different ingenious men, both
in France and England, have contrived additional apparatus
to render the engine more perfect. Indeed for long ago as
the year 1716, Henry Suly brought into England, among
his collection of new tools, a superb engine, made by
M. de la Faudrieire, which has been mentioned by Julien le
Roy, and described by Thiot in his "Traite d'Horlogerie."
About 1750, M. Taillemand made further improvements
in the cutting-engine, particularly by introducing a tubed
arbor instead of an arbor, with a square hole, which had
been usual before. After Taillemand, his apprentice Hulet
continued to construct engines in a superior way in France,
and is succeeded by his son Hulet the younger, whose execu-
tion is deemed equal to that of his father.
M. Fardill, another French mechanic, contrived a plate
to his engine, which afforded the means of cutting any
number of teeth in a wheel, prime or composite, by a circu-
lar rack and endless screw, the latter of which is fixed in
a stationary position. The description of this engine is
given in Thiot's work which we have already mentioned,
to which the curious reader is referred for a full account.
The number of notches on the circumference of the plate,
which has no divided circles, is stated to have been 420,
so that one revolution of the screw answered to a tooth,
where the wheel was required to be cut into 420 teeth, and
in proportion as the micrometer-head of the screw was
turned more or less than an entire revolution, were the teeth
reciprocally fewer or more numerous than 420. This num-
ber seems to have been chosen in preference to any other,
by reason of the many compound parts it is capable of being
divided and subdivided into. In practice it was necessary
to divide the number 420, and also the number of teeth of
the proposed wheel by some common divisor, in order to
reduce the terms into their lowest denomination; then the
quotient arising from the number of the wheel's teeth, in
using the common divisor, was made the number for the
divisions of the micrometer-head, and the larger quotient
coming from the term 420, was the proper number of di-
visions of the said divided micrometer-head necessary to
pass the index after cutting each tooth. An example will
render this mode, which was certainly ingenious, intelligible
to any ordinary reader, who has been an engine. Let the
number of teeth to be cut be 249, then the common divisor
will be 3, and \( \frac{420}{420} = \frac{249}{249} = \frac{83}{83} \); the smaller
quotient therefore 83 is the number of divisions proper for
the micrometer-head, fixed to the axis of the endless screw,
and 140 of those divisions must pass the index after each
cutting operation; the result in this case will be the fame as
if the micrometer had had 249 divisions, and 420 of these
had passed the index after the cutting of each tooth. The
micrometer-head had a ratchet wheel and contrivance for
making number one of the divisions come back to its ori-
ignal situation after each operation, thus the contrivance
in the engine for dividing sextants and nautical circles, which
engine will be seen in another place. This mode of cutting
all kinds of numbers, ingenious as it is, requires, however,
various micrometer-heads to suit such prime number, which
prime numbers themselves require dividing previously; con-
sequently the real advantages of this contrivance are no
means adequate to its improvements. Berthoud has given a de-
scription and drawing of a French machine for cutting the
teeth of wheels and pinions, in his "Essai sur l'Horlogerie,
" and also in his "Histoire de la Mefure du Temps," such as he
confiders of the best contruction; and in his "Traite des
Horloges Marines," he has described an apparatus for
forming the ends of the teeth by means of a concave file
collocated in a frame, which makes it move in a given direc-
tion; which description, together with the drawing, is col-
pied into his "Histoire de la Mefure du Temps." We
satisfy ourselves with a reference to these contrivances, in
order to describe two engines of English construction, which
have not been previously described, and which, we think,
merit a particular notice, both as specimens of ingenieny,
and as engines of great utility in daily practice. These
engines we have already referred to under our article Clock-
Engine; one as being used by the late Brown of King-
throt, Seven-Dials, London, which we learn was projected,
and partly made between the years 1770 and 1780, by
Hindley of York, who in London; and the other, as being
contrived by the late Rebi, machinist to the navy board of
works, and purchased by Troughton for the use of a
rebel who was since dead, and who is succeeded by James
Fayer of No. 35, White Lion Street, Pentonville, who now
uses it. On a reference to Mr. Troughton's books, we
find, that his late brother divided Rebi's engine-plate in
the year 1735, which fixed the date of its construction; and from this as a model it was, that the inventor constructed a similar one for Dr. Milner, the dean of Carlisle, of the expense of which that gentleman had not formed a competent judgment at the time he gave his order, to make as good an engine as could be constructed, which occasioned some demur about the payment. The worthy dean little suspected that the engine he had ordered would cost him three hundred pounds or guineas; and the reader will not be less surprised to be told, that Rebe's engine, with its apparatus, was sold at his false for a cock.

**Cutting Engine by Hindley.**

The cutting-engine contrived by Hindley is represented in Plate II. of Engines. Fig. 1, is a perspective view of the entire engine in a plane proper for cutting, with the exception of the foot-wheel surrounded by the cord that gives motion to the revolving cutter, and of the bench to which that wheel is attached, and on which the engine rests; but the reader who has seen a common turning-frame, or other mechanism turned by the foot, can readily conceive how a similar motion may be given to the cutting-engine by a lever, placed nearly horizontally under foot, and connected with the crank of the large wheel's arbor: figs. 2 and 3, show the cutter-frame detached from the engine, the part of which supplies the eye placed over it, and the other at one end when viewing it; we shall speak of them more minutely, and also of some figures in Plate III., when we have described the engine in its entire state.

A B C D E F is a strong iron frame, fixed by the end pieces at E and F to a steady bench, to which also the large wheel for the cord is fast, but not seen in the drawing; the side-pieces of the frame, A B and C D, are exactly parallel to each other, and their upper edges are terminated by two slopes that form an oblong and obtuse wedge, on which the crank bafe of the cutter-frame, G H I K, rests, and slides smoothly when one of the handles and micrometer head at L turns the horizontal screw, between B and D, that is tapped into a piece of metal behind the cutter-frame and attached thereto. M is a strong tube of brafs fixed to the side of A B by four screws seen to the right and left in the figure part to which the tube is fast; within this fixed tube M there is another tube N seen above it, which constitutes the revolving arbor of the large circular plate O, under the frame; the annular shoulder-piece, P, refting on the top of tube M, and pinned or screwed fast to the interior tube N, bears the whole weight of the plate O: a section of these tubes, containing another tube and arbor of a pinion to be cut, is given in fig. 1. of Plate II. The plate, O, is about a foot in diameter, and marked into a number of divided circles, with holes drilled through at each divided point, the use of which will be explained presently. Through the inner tube N, or axis of the plate O, passes a solid arbor on which the plate, O, is fixed, with a few notches cut on one side; this solid arbor is fixed by a screw, under the centre of the plate O, as seen in fig. 1. Plate II., and may be taken out at pleasure, and a projecting pin fixed in this solid arbor, below the wheel, takes into a corresponding notch made in the tubes N, which contrivance makes the solid arbor and tube, N, revolve together, as circumstances require, and also along with them the circular piece of metal Q, placed fast to the solid arbor by a collet and tapped nut screwing down upon the superior end of the arbor, formed into a screw, as seen in the figure. Of these solid arbors there is a variety belonging to the engine, with their superior ends varying in thickness to suit the different holes of different wheels previously turned and fitted to their respective arbors; but it is not necessary to introduce those different arbors into our drawing, as their shape is common, and their dimensions vary only at the superior end, where the wheel fits. In consequence of the connection of the solid innermost arbor with the tube N attached to the platform or divided plate O, whenever this plate revolves a given quantity, or division of one of its circles, the wheel fixed to the solid arbor, above the frame, moves with it precisely the same portion of a circle, and presents itself to the cutter or revolving circular saw R, borne by the moveable frame G H I K, and having a small pulley round the posterior end of its arbor, which is seen embraced by the cord that puts it in motion. Whenever the handle S, attached to the cutter-frame, as may be seen more clearly in fig. 2, is lowered by hand, the cutter, R, descends with it till meeting with the edge of the plate, or wheel Q, it cuts a notch through it, while the moving pulley gives motion to thesaid cutter; as soon as this notch is cut, the depth of which is regulated by the screw of the handle T, that moves the whole cutter-frame, the handle, S, is permitted to ascend, which it does by means of a spiral spring seen in the middle of the cutter-frame pressing under the top portion in fig. 2.; the cutter is then free from the notch of Q, and the latter is at liberty to advance round whatever the plate, O, is moved; during this time an index, with a fixing point, T, called by the French an alidade, holds the plate in a firm position, in consequence of the point, T, penetrating one of the drilled holes of the divided circle, made choice of for the operation; this point, T, is next raised by the right thumb pressing on its opposite end at U, while the fingers of the same hand turn the plate, the space of one division or more as may be required; the left hand in the mean time grasping the handle S, and the foot continuing to turn the large wheel, that is the first mover; the motion of the large plate has now brought Q, the wheel to be cut, a corresponding space round, to the situation required for cutting another notch, which the cutter immediately does on being brought down by S, the handle for the left hand, into contact with the operation of raising the fixing point T, and of moving the large plate O, another division, is repeated, and the wheel, Q, is again in a situation to have its third notch cut, and thus the motion of moving the large plate and lowering the revolving cutter alternately repeated till there are as many notches cut in the edge of the wheel, as the divided circle contains drilled holes of division, provided the plate is turned only the space of a single division; but when the plate is moved two divisions of the circle every time the point, T, is raised, then the number of notches cut in the wheel will be only half the number of such divisions; so that any divided circle on the plate will serve for a wheel that is either the whole number, or any exact aliquot part of that number. For the ordinary engine this description would have been sufficient to have conveyed to the reader an adequate idea of the operation of cutting a wheel fit for all common purposes; but the engine before us is comprehensive in its uses, and takes in all numbers prime and composite, whether divided on the plate or not, which lie under 560, its greatest number of divisions in one circle; may, it will go even beyond this number if found necessary, as will appear from a little closer inspection. In an ordinary engine, the fixing-index, or alidade, is made elastic, and placed on the side of the principal frame, and is moveable on the end opposite to the fixing point, so as to be capable of being placed as a tangent line to any one of the divided circles, but has no screw or micrometer to alter its length or position when once fixed, on which account a wheel cannot be cut into any other number of teeth, but
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Such as are laid down on the plate, or such as are derived from thence, by taking every second, third, or fourth, &c. hole of the divisions; whereas in the engine before us the fixing index, U T, is not attached to the frame, but to the four-armed piece of brass V W X Y, that is moveable round the inferior end of the fixed tube M at V, and connected with a worm-ferew by means of teeth cut on its branch Y, as shewn in the figure: the worm near Y is fixed by a cock to the end-piece E of the large frame, and has a micrometer head, Z, divided into sixty notches, instead of dividing lines, that the clamping index f, above Z, being screwed to the said end-piece of the frame, may make such a noise in passing the said notches of the micrometer-head as are audible to the workman, who therefore has no need to examine the dividing marks by the eye in the act of cutting. The branch, X, has an oblong hole in it, that the contiguous end of branch Y may be adjusted in it, by fixing the racked end near Y in a proper position to act freely with the worm ferow when wanted; the piece of brass a, with a long open in the middle, and screwed at g to the side, A B, of the principal frame, has the ferrow, d, passing through it to fix the branch X, whenever the worm-ferew is not required to be in use, which in this case fixes the index, T U, to the frame A B, but when the worm is used, as hereafter described, the thumb-ferew, d, is turned back. The arm W b, to which the index and fixing point, T, are attached, slides, in the adjustment for a given circle to be used on the plate O, along an under bar of similar dimensions, which it covers, and which is a part of V continued; the interior end of W b is kept to its direction by the fixed clamp, b, that moves on pivots near the letter k, at one side, and has a fixing point that penetrates the holes of division made and numbered, along the upper or sliding bar, with figures that indicate the divisions of any given circle to which the fixing point, T, of the fixing index is at any time placed; therefore, when a wheel is required to be cut into any number of teeth, found upon the divided bar W b, this bar is slid in or out, while the fixing point of clamp b is held up, till the hole designated by the required number falls under the said point, in which situation it is made fast by the thumb-ferew e, and the point, T, then falls into one of the drilled holes of the proper circle of plate O, which in ordinary engines contains the numbers itself. The index, T U, of the fixing point of the plate O, turns on pivots above b when pressed by the thumb at U, and has a spring underneath that makes it return, and holds it fall in any assigned hole of a given circle of the plate during the cutting of a space in the wheel required to be cut, but when the plate is wanted to be turned freely to move a large portion of a revolution for any purpose, the spring just mentioned can be locked, so as to hold the point, T, above the plane of the plate, till the act of cutting commences. By the help of this appendage to the engine a wheel may be cut into a number of teeth not divided on the plate in the following manner: suppose a wheel of 62 teeth were required to be cut, and that there were no divided circle on the plate nearer than one divided into 60 holes, to cut it from; then having fixed the wheel on the solid arbor by the fixing nut, in the situation of Q, and having slid the divided bar W b till the fixing point of b falls into the hole designated by 60 on the said bar, let it be fixed there by the thumb-ferew e, and let the point T fall into any one of the holes divided in the circle 60, which will now be exactly under it; also let the thumb-ferew d be turned back to let the four-armed piece at liberty to move by the worm-ferew Y, attached to the micrometer-head Z; in the piece of the frame of the apparatus cut a notch in the wheel, then press on the end of the index and carry the plate in the direction from O towards T, the quantity of two divisions, which will be two teeth in the wheel if they were cut, the cutter in the mean time being raised from the wheel, as in the drawing: turn in the next place the micrometer screw, and count the turns and parts of the micrometer until the wheel is brought back to its original situation; that is, till the cutter on trial is found to drop easily into the notch before cut without rubbing on one edge of the notch more than on the other. Let the turns of the micrometer thus counted be 7, and 14. notches or marks out of 60 over, for the means of two teeth in case 60 teeth had been the number to be cut, which will be 4.34 notches on the micrometer-head pasted over by the index f; then if these notches be divided by 61, the teeth to be cut there will be $\frac{434}{60}$ and 7, for the number of notches that the large plate O ought to be turned back after each tooth is cut, in a direction opposite to that of the plate's motion, when made to revolve after the fixing point, T, is raised; the proceeds therefore now to be used in cutting, is to raise the point T in the first place, then to move the plate from O towards T, one division or $\frac{1}{60}$ of the circle, after that to turn the micrometer back 7 notches of the 60, which carries the plate back again from T towards O, a small quantity, so as to form a tooth of $\frac{7}{5}$ instead of $\frac{1}{60}$ of the whole number to be cut. Lastly, let the notch be cut, and repeat the same proceed at every cutting, and it will be found at last that a wheel of 62 teeth has been cut instead of one of 60, on account of there being 63 times 7 notches in the 434, that have in the whole passed the index f, during the time that the wheel has been under the act of cutting. Should it happen, as will generally indeed be the case, that there is a remainder in the division of the notches by the teeth of the wheel to be cut, the remaining numbers may be intercalated thus: as a second example, let the number of teeth be 61 to be cut from the same circle of 60, and let the turns of the micrometer, as before, be 3, with 37 notches over, out of 60, for the space of a single division on the plate O; in this case there will be only 217 or half the former number of notches in the whole, to be divided by 61, the quotient arising from which is three, with a remainder of $\frac{44}{60}$, so that, properly speaking, $\frac{37}{61}$ notches of the micrometer ought to be drawn back after every shifting of the fixing point T, but this is not practicable without a ratchet, and returning back to the micrometer, which the engine has not got; therefore as 34 is only 3 more than half of 61, and as one notch on the micrometer does not affect the motion of the plate O in a sensible manner, the notches may be taken all together, except in three equidistant points of the wheel, where 4 may be taken twice in succession, which mode of interpolation of the notches belonging to the remainder, as they accumulate, may be practised with any other numbers, and the difference thus occasioned among the teeth will not be sensible even under a magnifying glass. The writer of the present article has seen and examined a wheel of 126 teeth cut from a circle of only 100 divisions in this manner, which appeared as evenly divided, as if it had been cut from a circle drilled or punched into 126 divisions.

If the number of teeth to be cut had been taken fewer than the divisions in the circle used on the plate, the micrometer-head must, in that case, have been turned the contrary way, to augment the divided spaces of the plate, and to enlarge the size of the teeth in proportion as their number is decreased, which effect can now be readily apprehended without further detail.

But this property of being capable of cutting wheels into all assigned practical numbers of teeth, is not the only advantage that this engine possessest over the common engines seen in the tool-shops: when the cutters of these engines require
require to be changed, the arbor, on the middle of which they are fixed, requires to be taken out of its frame, and to be replaced and adjusted to the centre of the plate, or middle of the solid arbor, as frequently, which is troublesome: also as the cutter-arbor revolves round stationary pivot-holes, the bottom of each notch cut in a wheel is necessarily a portion of the circumference of a circle, which in a thick wheel requires to be filed into a straight line after the cutting is finished. Both these inconveniences are obviated in our present engine. To avoid the first inconvenience, the cutter, R, is put on the projecting end of its arbor, and can be taken off and put on without displacing the arbor from its moveable frame. When, however, the cutters vary in thicknesses, they require an adjustment of their middle part to the middle of the solid arbor that bears the wheel to be cut, which is done by a converse femur belt in fig. 2; where R, as before, is the cutter, and H I an arbor, round the pivots of which the top of the frame, to which the handle, S, is attached, revolves, and to which the said top is united by a small handle i; when the screws, k and l, are loose, the top of the frame, l m n, is at liberty to have a motion in the direction from H to I, or the contrary; but the small handle, i, is screwed at the middle to the arbor H I, and at the interior end to the top of the frame, near the fork of the large handle S; so that, as the bearing parts H and I, beyond the two ends of the arbor, have no lateral motion, whenever the screws, k and l, are loose, and the end, i, of the small handle is moved towards H, the whole, l m n, and cutter, R, are carried towards I, and the contrary when the end, i, of the small handle is moved towards H; this side motion of the cutter, and of its arbor, affords the ready means of adjustment for cutting the spaces, and consequently of forming the teeth of any wheel with a given cutter, in a direction tending exactly to the centre of the said wheel; and when the adjustment is made, and examined by the notch in gauge p, fig. 1, which ought to fall on the middle of the cutter, when turned round its centre of motion at its lower extremity, the tightening screws, k and l, may be turned home again, and the cutter will remain adjusted. With respect to the other advantage of cutting the bottom of each space in a straight line, however thick the required wheel may be, fig. 3 will furnish an explanation; here is a side view of the cutter fenf'irs obliquely than in fig. 1, and detached from the other mechanism; H, as before, is the place, where the proper centre of motion of the arbor H I, in fig. 2, is, and R again is the cutter; the arbor of the cutter is hid, but can easily be apprehended to be admitted to pass up and down the opening s, of the part, K, of the frame, as seen in fig. 1; while a roller or friction-wheel, surrounding the said arbor, touches the interior sides of the fork s; this property of the cutter's ascending and descending in a straight line, when the handle, s, is raised or lowered, would however be checked by the limit of distance from R, the centre of the cutter, to H, the centre of motion; but the pieces, H and I, have also each a centre of motion at their lower extremities, as at r, which allow the centre H, and its corresponding one at I, to approach to, and recede from, the oblong apertures, s t, twice in each ascent and descent of the cutter; namely, once above its present horizontal position, and once below. The perpendicular screw at u, forms a stop to the ascent of the arbor, and a corresponding one below at s, forms a similar stop to its descent; the latter of which is also used as a limit for the depth of a contract wheel's teeth, during the operation of cutting. When a very large wheel is to be cut, there is a part of the cutter frame behind G, not seen, which is tapped, to receive the screw of the handle L, in fig. 1, one half of which tapped piece is cut away, and allows the other semicircular part to be set at liberty from the frame, by turning on a hinge, to enable the frame to slide freely to the rough distance, without turning the screw, which contributes to expedition in the adjustment of the cutter's distance from the solid arbor that bears the wheel. In common engines it may be proper just to mention the large plate O, together with its eccentric frame that supports its lower pivot, is adjusted by the horizontal screw to the cutter, the frame of which cutter remains always fixed to the principal frame.

Besides the parts above described, the engine before us has two appendages, that render its uses still more comprehensive, namely, for the convenience of cutting pinions on the arbor, and an apparatus for cutting straight racks, with which we will finish our account of this engine.

Fig. 1. of Plate III. (of Engines), is an elevation of the appendage for holding a pinion on its arbor, together with a fectiion of the concentric tubes above the large plate referred to above, but not seen. In fig. 1. of Plate II. A B is a portion of the principal frame, denoted by the same letters as before, M and N, a fectiion of the fixed tube M. In fig. 1. of Plate II., N and N, a fectiion of the revolving tube N, or axis of the plate, P and P, its bearing shoulder, and Q R, a third tube, instead of the solid arbor, holding the pinion arbor fall, and fixed by the milked nut, R, under the plate O, seen now as a straight line, the flag of the innermost tube at Q, has many holes drilled into it, tapped so that not only a pinion, but a wheel also, may be attached to it, and cut, after it is fall to its arbor; of these tubes, Q R, there are many varieties, differing in bore and size of the flag, to suit different purposes. The piece a b, attached to the frame A B, by two screws at a, has an oblong opening, receiving the sliding piece e, that can be fixed by a thumb-screw behind, at any height, and that admits the horizontal bar d, to slide through it, before it is fixed; at the part e, of a b, is a hole with a flit, that allows it to open or close by the action of the screw f i, through this hole e, the steel wire, g, paffes, and forms a bearing for the upper pivot of the arbor, p, of the pinion, which otherwife would yield to the cutter, while the bar d, pressing against the said arbor near the pinion, prevents its bending during the operation of being cut, or fitt, as this operation is usually called, which is performed like the cutting of a wheel, already defcribed.

Fig. 2. of Plate III. is a plan of the upper side of a small plate of brass; and of its appendages, for holding a rack during the act of cutting, and for limiting the size of the teeth to any given dimensions; a b, is the plate in question, mounted over the frame of the engine, near the cutter, by means of a strong bar, like a b, in fig. 1, and placed in the same situation, as may be seen in fig. 3, which is an end view of fig. 2.; the two little screw-holes at each side of the letter b, in fig. 2., fiew the place of attachment; and a strong screw, passing through the larger hole at e, enters the superior end of the main arbor of the engine plate, and fixes this mechanism steady enough to bear the action of the cutter, applied in the usual way. The bar to be cut into a straight rack lies upon this plate a b, from d to e, between the cocks d and e, on one side, and the adjustable bar f, on the other, which bar fiding in the two oblong openings, may be fixed at the required distance from the said cocks, by means of the two screws at its opposite ends taking into two mud, beneath, while a couple of thumb-screws g, h, seen in fig. 4., which is a side view, press above the said bar intended for the rack, and keep it firmly down. The pinion i, with twenty teeth, is used as the head of a micro-
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Plate IV. of Engines exhibits a general perspectival view of the engine for cutting the teeth of wheels, as originally made by Rehe for his own use, and which, we have said before, is now the property of Mr. Troughton of Fleet-street. It is drawn to one-fourth of the real size. A A B C D E is one solid mass of cast-iron, formed into a frame in the mould, of which A A is the upper horizontal part, B and C the ends of the said frame, and D E its base, fixed with four strong screws (the heads of which are visible) to a wooden frame, to which the large wheel is appended, that gives motion to the revolving cutter and some intermediate pulleys placed over the head to give a due direction to the moving cord: this large wheel and these pulleys are purposely omitted in the drawing to give room for the engine itself to be taken on a good scale. F G and G are a pair of checks forming a part of H I, which is another piece of cast-iron of the shape of a parallelogram, having an oblong aperture through the greatest part of its length, along the middle. K L is the platform, or large plate, of the engine, in which are drilled the dividing holes of a variety of circles; its diameter is nineteen inches; the arbor of this plate is a strong brass tube, M N, reeding in a hole in the base, D E, of the large frame, and having a screw formed on its circumference at N, with a correspondingly tapped nut, that has got a handle to turn it by; it has also a flat cut through it to admit a wedge under the nut, as may be seen without further description; the upper part of the arbor is supported by a hole in the top part of the frame A A, and passes freely through the oblong aperture of H I. The tubed arbor, M N, of the large plate will receive a variety of arbour increasively, each of which has a flat to receive the wedge already named, near N, while the nut N, turned firmly down on the wedge, sets the interior arbor, that carries the wheel to be cut, fast at the shoulder O, on below its inferior end. The interior arbor is, however, composed of two pieces, of which the upper part bears the wheel and is screwed fast into the lower part between M and O. There is a great variety of the upper parts of the interior arbor to suit different central holes of different wheels, as well as different shoulders, or reeding places, for the wheels to lie upon in a steady manner, all which

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would take several plates to represent, but may be easily conceived to be only different sizes and shapes of the same thing; it may, notwithstanding, be right just to remark, respecting these bearing pieces of the arbor, that the centering of the wheel does not depend on the screw part that enters the concealed arbor, but on a circular bed, M, made at the top of the lower half of the arbor, which a corresponding circular piece of metal of the upper half, under the bearing shoulder that holds the wheel, near O, exactly fits, by which means the wheel is certain to be placed in the centre of the large plate, which is an essential condition. The wheel, which is seen with a few notches cut, is fastened by a collet pressed down on its plane, by a tapped nut screwed from above the arbor. P Q is a brass frame, embracing the solid checks C and F, and bearing the cutter and its arbor R, that has got a pulley on its posterior end, round which the cord of the first mover goes, and to which it gives the motion at first produced by the foot: when the cutter is taken out to be changed, the end piece S, and a circular piece concealed at the opposite pivot of the cutter arbor, are set at liberty, by the tightening screws, T and T', being turned back pro tempore; a plan and side view of one of the cutters, of which there is a great variety of sizes and shapes, may be seen in fig. 2, of Plate VI., and the arbor dismounted and separated into its parts in fig. 3, of Plate V., of one half its real size, both of which may be understood by inspection of the figures, in the latter of which a is the pulley on the end of the arbor, b the part where the cutter is fixed by pressure of the tubed part e, urged by the nut f, when screwed home. When the hand U, in Plate IV., is turned, which has a pinion on its arbor taking into a straight rack, fixed to the part embracing the cheek C, out of sight, the whole brass frame has a motion, up or down, as the handle may direct, which is always given it in the operation of cutting each notch. This motion of the whole cutter frame is made easy and smooth by eight sectorial pieces of hard polished steel acting as friction wheels against parallel bars, attached to the checks, both within and without the said checks; of these sectorial pieces 1, 2, 3, and 4 are seen, but the others, placed in their opposite and corresponding places, are concealed from the view, by the intervening parts of the mechanism. Behind Q, on the posterior part of the cutter frame, is a box containing a spring, with a chain, at its lower end to a piece of metal, not fixed, between the checks and behind the cutter frame, which spring balances the weight of the frame in any position, and renders the working pleasant. Near the character g is a perpendicular screw seen, the lower end of which bears against a solid piece fixed between the checks, when the frame is lowered so much that the cutter is free from the wheel it is cutting; which screw is also the part of adjustment for the exact depth of a space in a contra wheel, while the barrel and chain limit the ascents. The whole of this cutter frame is attached to the horizontal parallelogram H I, and is moved to or from the wheel to be cut, by a horizontal screw on the arbor of handle V, which enters a tapped part of the metal under the cutter frame, and when the distance for making the teeth of a proper depth is ascertained, the whole of the moveable part of the engine is fixed fast in its given position by the clamping piece W, and crooked nut, that takes the screw on the upper end of a bolt, pulling up from below the top, A A, of the large fixed frame; the clamping piece, W, has a dove-tailed projection under it, that enters and fills the breadth of the oblong aperture of H I, and keeps the piece at right angles thereto. X is the fixing index, or index-bar with a fixing point, that holds the large plate in a given position; this index-bar slides into an octagonal socket Y, to which it is firmly fixed, when necessary, by the thumb-screw seen under it; and near Y is a micrometer head divided into 30 divisions, for which a pin behind it forms an index; by means of this micrometer screw the fixing index can be made to protrude, or retire, any given small quantity, and when its fixing point rests in one of the drilled holes of the large plate, it consequently takes the plate along with it, and also the wheel fixed at the top of the plate's solid arbor. The socket Y has another octagonal hole at right angles to the former one, which enables it to slide along the octagonal axis Z, so that the fixing point of X may approach or recede from the centre of the plate, and be made to fall into any given divided circle; the numbers of each circle are laid down in the small oblong plate a, for which a line on the moving socket, Y, forms an index. This part of the apparatus belonging to the plate would have been sufficient, if the operator were to take the trouble of counting the holes of division on the plate as he turns it in the act of cutting; but in those cases where every second, third, or fourth, &c. hole only is taken by the fixing point, in order to cut a wheel into one-half, one third, one fourth, &c. part of the number laid down in any circle, such counting is very troublesome; therefore a curious addition of a moving index b, ε is introduced to be a substitute for the counting. This index turns on the arbor of the large plate, and has a fliding point and thumb-screw ε, to fix it in any given hole of the circle chosen for the fixing point of X to rest in: d e is a sliding flap, passing through a cock fixed to the part, A A, of the principal frame, and is held in any given situation by the thumb-screw over it; and f g is another flap attached to a second cock, fixed in like manner to A A; which second flap can be placed in various positions, by means of its own flit and two thumb-screws, and also of the two flits in the cock at right angles to the length of the flap. The use of the moving index is this: when the fixing point of X is fast in its proper hole of any given circle, the moving index is brought near to it, that its point will fall into the next contiguous, or second next hole, in which situation the inner flap, d ε, is brought to bear against it and fixed, then the moving index b, ε, is removed back over two, three, four, or as many holes as are to be counted at each act of cutting a notch of the wheel, from the index X, and is put into the hole so counted, in which situation the outer flap, f g, is brought to bear against it and made fast; now it is easy to conceive, that if one hand were to raise the fixing index, X, out of its hole, whilst the other hand were to bring the moving index together with the large plate into which it is inserted, until it meets with the inner flap d ε, the point of X would then cover the hole counted, into which it might be permitted to fall at random, and it would find its own proper hole under it; then raising the moving index from its hole, and moving it to the outer flap, would place it over the hole to be next counted, into which it might also fall at random. Thus the operation might be repeated all round any given circle, while the flops would act as counters, and the moving index as a handle to move the plate by; but this mode of using the indexes would occupy both the hands of the operator, and would require a second person to turn the handle U, and to attend to the cutter; an appendage therefore to the moving index is added, which connects the
the theory supposes; an objection from which the more complex mechanism of Hindley's engine is free. When a wheel of 142 teeth was cut on our present engine, in our presence, from a divided circle of 149, nineteen teeth of the micrometer were found equal to a motion of two divided spaces, as compared with the moving point, when left stationary against the outer float; therefore, as there are 30 divisions on the micrometer head at Y; 19 × 30, or 570, were the whole divisions to be divided by the number 142, and gave a quotient of \( \frac{228}{5} \), with a remainder of \( \frac{140}{5} \); consequently, after every moving of the plate for a new cutting, four divisions of the micrometer head were turned in a backward direction, to lessen the size of the teeth, and to increase their number in the proportion \( 142 : 140 \); but at two opposite points of the wheel, the remaining two were interpolated, by giving five divisions instead of four at each place; the additional division on the micrometer, however, made at each of the said two places, made no sensible difference in the size of those teeth, nor would it have been of any importance, if the remainder, which was so small, had been neglected altogether. A similar process, explained more fully in our account of Hindley's engine, must be adopted agreeably to a similar calculation, for any other number of teeth to be taken in or left out by the aid of the micrometer. The original circles of the large plate were divided by Troughton's dividing-engine into the following numbers, 92, 720, 580, 504, 366, 305, 306, 300, 276, 228, 192, 186, 170, 162, 150, 140, 128, and 118; to which have been added, at different times, the numbers 274, 260, 206, 148, 136, 135, 111, 105, 101, 87, 83, 74, 69, 47, 43, 41, and 37, so that, by this engine, all numbers under 100 can be cut without the help of the micrometer, except 97, 95, 89, 88, 79, 77, 61, 53, and 49.

When our present engine is used to cut pinions on their arbors, a feel perpendicular bar descends from a beam in the room directly over the centre of the plate, and holds the upper end of the arbor steady, while the lower end is made fall to the revolving arbor. There are also many other useful appendages to the engine, some of which merit a particular description and corresponding drawings, which we have obtained.

Fig. 1, of Plate V, is a detached cutter frame of one-fourth of the real size, to be used occasionally when a wheel is wanted to act with a worm-screw, in which case the teeth are required to be a little inclined from the axis to the right or left, accordingly as the screw is a right or left-handed screw. When this cutter frame is used, it is attached to the checks G, F, in Plate IV., without disturbing the frame already attached. A B is a strong brass plate with two forked pieces, C, D, projecting back from its posterior plane near the top; these forks enter over the sliding frame S Q, in Plate IV., and embrace the two tapped fluts n and p not seen, within the check, by which they are held fast when pressed by the tapped nuts of the said fluts; at A, the bottom of the plate A B, in fig. 1, of Plate V., is a screw which enters the small tapped hole, near I, on the sliding piece I I, in Plate IV., and a corresponding screw at the other side, out of sight, holds the fourth or concealed corner of the said plate A B, so that this plate, when thus attached, may be considered as a part of I I, in Plate IV., behind which additional plate the common cutter frame is concealed, and remains useful for the time. E F is a second plate of brass of nearly a form circular, and fitted on its periphery; this second plate is attached to the former one, A B, by two tapped bolts passing through the long opening, G, and made fast with nuts at E and F, by which means
means this second plate can be placed at any given height of A B, and a motion, which it has round E, as a centre, allows of its being placed to any angle of obliquity marked on its periphery; the circular slat at E, allowing the upper or fixing bolt to pass along it to any required position, before it is fixed by the nut: the cutter frame, HI KL, moves on pivots in the feet of EF, near A and K, which pivots are turned out of an horizontal line to the right or left, by the obliquity given to the plate E F, and consequently the cutting-cutter, L I, has also an obliquity, which makes the cutter at the middle of it cut the notches in an oblique direction; this cutter, however, having one centre of motion, or rather one pair of centres, cuts the bottom of the notches of a wheel in a circular direction. The arbor of the cutter has a pulley which gives it motion, and the two pulleys, a and b, over it have no other use, but to direct the cord to the larger distant pulleys, not shown in the drawing. When the plate, E F, is adjusted to zero, or horizontal line, it may be used for cutting ordinary wheels, but is liable to be displaced by accident or jerks in cutting; therefore is used only for wheels with oblique teeth. The French engine recommended by Berthoud, as made by Huget has, notwithstanding, no other cutter frame but that which is adjustable for obliquity. The vertical screw, d, is a reft for limiting the depth of the spaces of contrate wheels in cutting, and also for stopping the descent of the frame further than is necessary in cutting other wheels: the opening B of the plate A B seems to have no other use, except for the eye to look through at the cutter, when the workman stands behind the cheeks to turn the drill moving wheel of the cord, which wheel, we remarked, is not very conveniently placed to consult the easy position of the body, during the act of cutting. This frame being attached to the filing part H I, of Plate IV., is of course capable of the adjustment for distance from the arbor of the plate, on which the wheel is placed, that requires to be cut.

Fig. 2, of Plate V., is a representation of the apparatus for cutting the interior edge of an annular wheel, such as is used in a theodolite, and for microscopes, &c. of 1/2 of the actual size. A B is the ring or annular wheel to be cut, which is fixed to the top of the arbor by means of the wooden chuck, on which it was turned in the lathe, and a b c d is a short frame for the cutter e, and cutter-abor, seen detached in two pieces in fig. 3 of 1/2 the real size. This small frame is attached to the face of the cutter frame in Plate IV.; its arbor, a b, enters the hole of the arbor at e, and an opposite hole not seen in Plate IV., after the arbor, K, has been previously removed, and is made fast by the two screws x and y, entering the holes e and d, of fig. 2. Plate V.; the interior teeth are then formed by the small cutter, by a proved similar to that of cutting the exterior teeth of a wheel in the ordinary way.

Fig. 4, of Plate V., is a contrivance of 1/2 of the real size, for cutting a rack into any number of teeth per inch, by the aid of the engine plate and common cutters, thus; A and B are two strong cocks screwed fast to the opposite sides of H I, already described in Plate IV.; C is a piece of metal forming a bed for the oblong bar, D E, to rest on; this bar, which is a rack already cut, is placed with its teeth in action with a wheel of 74 teeth nicely rounded, that is attached to the arbor of the plate in the usual way; under the bar D E, and fast to it, is a rib parallel to its fulcrum, moving easy in a corresponding long groove made in the bed, C, to receive it, the motion of which is made smooth by friction wheels interposed and borne by the bed; the bar, D E, has a great number of holes drilled and tapped in it, that the moveable corks or clamping pieces, F, F, and F, may fix any bar, G, to be cut into the requisite rack; when the mechanism is thus arranged and properly fixed, the motion of the wheel, caused by moving the subjacent plate, a given number of holes of any circle fixed on, will carry the racked bar D E, and bar G along with it, over the bed a certain distance, between the cutting of each space of bar G, and this distance may be made 1/16th, 1/32th, or 3/32th of an inch, according to the number of divided holes on the plate, paved over by the moving index, between each operation of cutting.

These three appendages render the engine competent to cut teeth in all ways, and on all wheels and bars that are in use in mechanical contrivances; but the teeth thus formed with ordinary cutters, are in the shape of parallelograms, and require to be rounded by hand with a file or files of different coarseness and shape; the contriver, in common with other workmen, had experienced the inconvenience attending the finishing, both as it was a laborious operation, and liable to produce irregularities in the shape of the tooth, on which the equable transmission of power and velocity entirely depend, in clocks, watches, and other delicate machines; he therefore constructed his cutters in such a way, that they rounded the teeth at the same time that they cut the spaces; this invention is very important to the successful application of racks and wheel-work in many cases, where a good shape of the tooth is indispensably, and has been claimed by both Rehe and the late ingenious Merren; but which of the two, if either, was the real inventor, remains to be decided.

Plate VI. of Engines italicizes the drawings of some cutters to answer the purpose of rounding the teeth during the act of cutting, and also the apparatus for forming the cutting edges and for sharpening them when blunt, which apparatus is indispensably necessary to accompany the engine when finishing cutters, as we shall henceforth call them, are adopted in practice.

A A, in fig. 1, is the front side of a wooden bench, to which a foot wheel, as a first mover, is fixed out of the drawing, and B B is a small frame attached to its inferior plate; C C C is a species of small lathe, with a three-grooved pulley revolving on a solid arbor, together with the arbor itself; this lathe is attached to the brafs plate D D D, and by means of it were fast to the wooden bench A A; at the exterior end of the arbor that bears the pulley, is fixed a circular copper plate, E E, with its plane at right angles to the said arbor, which plate consequently revolves with the pulley, when the foot wheel gives motion to the cord that embraces it; thus above the brafs plate, D D, of the small lathe, lies parallel thereto another shorter but smaller plate, F F, attached to and borne by a side plate, G G G G, that fits the frame under the bench, and slides up or down to nearly the height required in use, in which it is fixed by the thumb screw H, under the bench; at the ends of the plate F F, which we will call the bed of the cutter frame, or frame for holding the cutter while grinding, are two crofs bearing pieces near F and F respectively, on each of which are cut three semi-circular notches, some of which are seen at a, a, and a; I I is the horizontal plate of a cutter frame resting on the horizontal tapped wire, K, that has got a milled nut screwing upon the tapped part beyond the bed F F, and has its opposite bearing end concealed under the other parts; this plate, I I, may be fixed to any part of the bearing wire, K, by the thumb screw k, and will have a little circular motion round the wire, to the right or left, when not held in the...
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hand, or nicely balanced; above this plate, \( \Pi \), lies a still smaller plate, \( \Lambda \), that bears the cock \( M \), and another familiar one coincided, but opposite to it; which small plate, \( \Omega \), is moveable round a centre of motion under it, on the next subjacent plate \( \Pi \), but can be fixed in any given position by the thumb-screw at \( L \), agreeably to the graduations marked near its extreme end, beyond the circular groove penetrated by the thumb-screw, for which graduations a line on the small cock, \( \omega \), constitutes an index; into the cock \( M \), and the one coincided, passes an arbor not seen, that may be called \( e \), which is capable of being fixed by pressing screws at the external sides of the flat cocks; across this arbor, \( r \), at right angles, is a long hole, or tube, into which the cutter arbor is inserted, and fixed by a pressing screw \( N \); so that the plane of the cutter may be made either horizontally parallel to the copper circle \( E \), or to stand in an inclined direction; accordingly as the arbor, \( e \), is turned more or less round before it is fixed by its pressing screws at \( M \), and at the opposite pivot; while the thumb-screw at \( L \), by the help of the graduations near it, fixes the planes of the cutter and circular plate, \( E \), vertically parallel, or at any given angle of inclination to each other, as the shape of the acting faces of the tooth may require; the nut at \( D \) limits the proximity of the cutter to the circle \( E \). In the present position of the cutter, its plane is smoothed by emery fine over the copper circle, as the arbor revolves, and while the plate, \( \Pi \), has a circular motion given it backwards and forwards by hand, round the bearing wire \( K \), which alternate motion carries the cutter across the plane of the grinding circle \( E \), and affords the grinding; upon the arbor \( e \), not seen, is a second divided scale of a circular shape, like a micrometer head, by means of which the situation of this arbor, and consequently of the cutter's plane, is adjusted before the pressing screws are made quite fast; and a small gauge, near \( f \), like a small leg and foot, moveable at its knee, on the cock, presents its heel to a tooth of the cutter, and limits its position in such a way, that each succeeding tooth to be sharpened may be fixed, by the pressing screws, in precisely the same situation while they are respectively sharpened. By the help of these various adjustments of the plane of a cutter, such, for instance, as is seen in two views in Fig. 2, the preceding or cutting part of each tooth is made thicker than the following part, and also the part at the periphery thicker than the part nearer to the centre, which shape makes the cutter clear itself in the face it cuts as it advances, and addition that experience has proved to be necessary in forming or sharpening a cutter. When one plane of each tooth of a cutter has been gone round, the planes are reversed, and the cutter fixed as before by the help of the cheeks, gauge, and screws, and then the former process of grinding the teeth singly in succession is repeated.

When the plane \( \Pi \), with its appendage, which together we have called the cutter frame, is lifted out of the semicircular notches or bearings on the ends of the bed \( F \), and is laid aside; another nearly similar frame, seen in Fig. 3, is put into its place, with the parallel wires, \( \alpha \alpha \), and \( o \), referring in the said semicircular notches, as in Fig. 1, are denoted by the same characters; in this situation the nut, \( D \), in Fig. 3, falls in the place of nut \( D \) in Fig. 1, and answers the same purpose of adjustment for proximity of the cutter to the grinding circle \( E \); the small upper plate, \( \Lambda \), is also nearly the same as in Fig. 1, both as to its profile and uses, where also the index line of the small cock, \( \omega \), points out the degree of obliquity on the graduated sectoral part; but here the frame is not a single plane \( \Pi \), resting on the bed as in Fig. 1, but has a motion round the pivots \( b \) and \( l \), placed on another plate that bears the wires \( \alpha \alpha \) and \( o \), so that the two plates may be made to open, and form a blunt wedge, by turning the screw \( l \), which bears on the lower plate with its point, and is tapped into the upper plate, after which adjustment for height, which cannot be made nicely by sliding \( G \) \( G \) \( G \) \( G \) only, the position is rendered permanent by the fixing nut, \( l \), that takes a tapped fluid fixed to the lower plate. In this figure, the arbor that holds the cutter is in the situation of the arbor \( a \), Fig. 1, which we said cannot be seen; and the ends of the teeth are presented to the grinding face of \( E \), which position of the cutter could not be attained by the mechanism of Fig. 1. On the cocks that bear the pivots of the cutter arbor, are fixed two small cannons, on which the bent arms, \( m \) and \( m \), revolve, and are fixed by the pressing screws \( n \) and \( n \); the play of the arbor is limited by the two thumb-screws \( a \) and \( o \), fixing the stops in their respective places; and a wire, \( b \), connected with the arms \( m \) and \( m \), forms the circle of motion of the leg or gauge, which is here better seen than in Fig. 1, and performs a similar office. It is hardly necessary to add, that after each tooth is pointed in this way, the fixing screws \( m \) and \( m \), and also the gauge \( f \), are released for the moment, and brought back again to their original situation at the adjustment of every successive tooth to he grinder.

For sharpening the front edge of a tooth, the cutter must be reversed, the bed lowered, and the nut, \( D \), turned back, till the position, represented in Fig. 4, be obtained: in which the teeth are facetiously ground as before directed.

The mechanism above described is all that would be necessary, if the tooth of the cutter were made by straight lines to cut teeth of a shape like a parallelogram, but to round them at the same time required another addition, which remains to be described.

In Fig. 5, are seen two different views of a cutter, such as will round the teeth and cut them at the same operation, by means of the sides of the cutter's teeth being formed into curves; these curves ought to be epicycloids, or involutes of a circle to constitute a tooth of any wheel of the exact shape requisite for the equable transmission of power and velocity, and these curves should vary in shape with the size of the wheel compared with its pinion or fellow-wheel; but such niceties cannot be obtained in practice without almost infinite trouble: therefore the same cutter, once shaped and hardened, it used for wheels of different diameters, where its thickness is found proper. Fig. 6, shews how the side curves of the cutter's teeth are formed, where a cylinder of copper is sublimated in the small lathe C C C, Fig. 1, for the arbor and circular plate \( E \); Fig. 3, is then applied to the bed \( F \), and the side of the tooth is adjusted to touch the side of the cylinder as it revolves; this mode of application would make the curve circular if the cutter-arbor were to stand at right angles with the grinding cylinder; but as any degree of obliquity can be given, by undoing the thumb-screw \( b \), and moving \( l \), the position ought to be such as to make the tooth reil obliquely against the cylinder, more or less, as the shape may require, in which case an elliptic curve, instead of a circular one, is formed on the edge of the cutter, by reason of the oblique section of a cylinder forming an ellipse, which curve approaches nearly to the shape required in a given degree of obliquity, and may always be used when once determined. When the curve on one side of each tooth of the cutter are thus formed, which are adhered by a motion lengthwise of the frame in the bed, while the wires \( \alpha \alpha \), and \( \omega \), slide in their bearing notches, the planes of the cutter
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cutters are reversed, and the opposite corresponding curves are formed in a similar manner. Cutters of this kind not only facilitate the labour of making wheels, but render them more perfect than manual filing can possibly do; and it is to be regretted that locksmiths in general will not go to the additional expense of having them thus formed.

Thus, each of the two engines we have described, have appropriate advantages; and we think it would not be difficult to construct one that would unite the advantages of both, and be preferable to either.

**Cutting-off in Military Language.** See Retrenchment.

Cutting, in Island Navigation, signifies the fame with digging or excavating; and thus they say, such a part of the canal is in level-cutting, or in deep-cutting, according as the surface of the water is nearly level with, or considerably sunk below, the natural surface of the ground.

Several of the most remarkable instances of deep-cutting upon the British canals, are mentioned in our article Canal. See Plate l. Canals, fig. 6.

**Cutting, in Painting,** the laying of one strong lively colour over another, without any shade or lightening. The cutting of colours has always a disagreeable effect.

Cutting in wood, a particular kind of sculpture, or engraving; denominated from the matter wherein it is employed.

It is used for various purposes; as, for figured letters, head and tail-pieces of books; and even for schemes, and other figures, to save the expenses of engraving on copper; and for prints, and lamps for paper, calicoes, linens, &c.

The invention of cutting in wood, as well as that in copper, is ascribed to a goldsmith in Florence; but it is to Albert Durer, and Lucas, they are both indebted for their perfection. See Engraving and Printing.

One Hugo de Carpi invented a manner of cutting in wood, by means whereof, the prints appeared as if painted in claire-obscure. In order to this, he made three kinds of lamps for the same design; which were drawn, after one another, through the pens for the same print: they were so conducted, as that one served for the grand lights, a second for the demi-teints, and a third for the outlines and the deep shadows.

The art of cutting in wood was certainly carried to a very great pitch about two hundred years ago, and might even vie, for beauty and juiciness, with that of engraving in copper. It was reduced however to a low condition, as having been long neglected, and the application of artists was wholly employed on copper, as the more easy and promising province; not but that wooden cuts have the advantage of those in copper on many accounts; chiefly for figures and devices in books; as being printed at the same time, and in the same press, as the letters; whereas, for the other, there is required a particular impression. In the representation of plants and flowers, and in designs for paper-hangings, where the outline only is wanted to be printed, in a bold full manner, this method will be found cheaper and more effectual than the use of copper-plates. It has been lately revived by the Bewicks of Newcastle; and several other persons have applied the art with great success; so that some of their vignettes have a brilliancy and force, which almost rival the first and finest productions of copper.

The cutters in wood begin with preparing a plank or block, of the size and thickness required, and very even and smooth on the side to be cut; for this, they usually take

beech, pear-tree, or box; though the latter is the best, as being the cloeest, and least liable to be worm-eaten. The wood being cut into a proper form and size, should be planed as even and truly as possible; it is then fit to receive the drawing or chalking of the design to be engraved.

But the effect may be made more apparent, and the ink, if any be used in drawing, be prevented from running, by spreading thinly on the surface of the wood, white lead, tempered with water, by grinding with a brushe pencil, and afterwards rubbing it well with a fine linen rag, whilst it is wet; and when it is dry, brushing off any loose or powdery part with a soft pencil.

On this block they draw their design with a pen, or pencil, just as they would have it printed. Those who cannot draw their own design, as there are many who cannot, make use of a design furnished them by another; fastening it upon the block with paste made of flour and water, with a little vinegar, or gum tragacanth; the strokes or lines turned towards the wood.

When the paper is dry, they wash it gently over with a sponge dipped in water; which done, they take off the paper by little and little, still rubbing it a little oft, with the tip of the finger; till at length there be nothing left on the block, but the strokes of ink that form the design, which mark out so much of the block as is to be lapped, or left standing. Figures are sometimes cut out of prints, by taking away all the white part or blank paper, and cemented with gum-water to the surface of the wood.

The rest they cut off, and take away very curiously with the points of very sharp knives, or little chisels, or gravers, according to the bigness or delicacy of the work; for they need no other instruments.

It differs from engraving in copper, because in the former, the impression comes from the prominent parts, or strokes left uncut; whereas in the latter, it comes from the channels cut in the metal.

The manner of printing with wooden prints is much more expeditious and easy than that of copper-plate: because they require only to be dipped in the printing-ink, and impressed on the object in the same manner, and with the same apparatus as the letter printing is managed; and for purposes that do not require great correctness, the impression is made by the hand only, a proper handle being fixed to the middle of the print, by which it is left dipped in the ink, spread by means of a brush, on a block of propotional size covered with leather; and then lifted up instantly, and dropped with some little force on the paper, which is to receive the impression. Handmaid to the Arts, vol. ii. p. 222.

**Cutting, in Gardening,** a small portion of a branch, twig, shoot, or other part of a plant, cut off for the purpose of planting, with a view of increasing the kind of tree, shrub, or plant from which it is taken.

There are numerous trees, shrubs, and plants which are capable of being propagated with facility in this way; but in some, the young tender shoots or branches of one or two years growth can only be employed with success: while in others, the large boughs, or even poles, may be made use of with the greatest certainty of their growing. This is the case with most of the aquatic kind of plants; as the willows, poplars, &c. And there are still others in which the leaves can be had recourse to, as the agave and aloe kinds.

For the part in the herbaceous and succulent plants, cuttings of one or two years growth are commonly used; but
but in those of the tree fort, those of one year; and in those of the hard wooded kind, those of the same years growth. The most proper lengths for making the cuttings are different in different sorts, according to the nature and habits of growth of the plants; but in common, from three or four inches to a foot, or a foot and a half; the strongest requiring in general the most length to be left to them.

In the busines of the choice of shoots, branches, or other parts for this use, those of the firmest and most even growth, and the finest from lateral shoots, should be fixed upon. In most strong-shooting trees and shrubs, and all the more succulent plants, the cuttings should be taken from the lateral or terminal shoots. The cuttings in the herbaceous are usually made from the stems that support the flowers, which should be cut off from the bottoms, and afterwards divided into workable lengths for the purpose.

In some particular sorts, as those of the tree and shrub kinds, it is found advantageous in some cases to take them off with an inch or more of the former year's wood, as in the pine, laurel, and some others of a similar nature. In the mode of preparation of cuttings for planting, the only thing necessary is that of trimming of such side-shoots as may be present, and occasionally the crooked drooping tops in the deciduous kinds; but this should not be done in the evergreen or herbaceous succulent sorts. Where the shoots are of considerate length, the lower parts should principally be employed for the purpose of cuttings.

The proper reason for planting out cuttings are, according to their kinds, either the spring, summer, or autumn. The first and the last are in general the best for most sorts of trees and shrubs. Those of the herbaceous and flowering kind mostly succeed best when planted in the spring and summer months; but those of the luxuriant and more succulent sort answer best when put into the earth in the summer season.

In the busines of planting the cuttings of different sorts of plants, such as those of the tree, shrub, and other kinds that are not succulent, they should be put nearly two-thirds of their lengths into the ground; but those of the succulent sort should only be put lightly into the soil, so as just to support them in their proper position, as when put in too deep they are apt to rot, and do not take root so readily. The cuttings of most of the tree, shrub, and plant kinds should be put into the soil as soon as possible after they are made; but those of the succulent tribe are better to remain out of the earth till the cut parts be fully incrustated or healed over, as when put in while the moisture is oozing out, they are apt to rot and be destroyed. In all the sorts the mould should be well pressed about them, and in the former kinds be kept properly cool by watering. It is also of great use to keep them perfectly steady in the earth when they are first put into it.

In the management of cuttings after being planted out, different methods must be pursued according to circumstances; some succeed perfectly in the open ground, others in shaded shady situations; some require to be placed in pots, for the convenience of occasional protection in severe weather, and others to be plunged in hot-beds in order to improve their striking root, as is fully explained under the culture of each particular sort of plant.

The length of time which is necessary for striking root is also different in the different sorts. In many of the tree, and some of the herbaceous, shrubby, and succulent kinds, it will be perfectly effected in the course of one or two months; and in almost all the sorts in the course of a twelvemonth. When afflicted by articial heat, it is always effected in a more expeditious manner than where the contrary is the case.

In this method of propagation, the varieties of all the different curious species which are capable of being increased in this way, may be equally preferred and kept distinct, as in the practices of budding, grafting, and layering.

In order to raise plants of many sorts in this manner, much attention is not only necessary in regard to season, but great care required in their management.

Cutting-Box, in Rural Economy, is a contrivance of the box kind constructed for the purpose of cutting different sorts of materials, as straw, hay, and the haulm or stems of various plants, as those of the pea, bean, and other similar kinds by the hand, into a small flat, or what is usually denominated chaff, to be employed as cattle fodder.

It is a sort of tool which has undergone various alterations and improvements since it was first invented; but it is only necessary to notice those which have more lately been made, for the present purpose. The chief of which consists in the addition of what is termed a 'preser' (preparatory), the original box, which is open on the upper part. This is formed of a piece of wood of the same length with the width of the box, having a number of upright tongues or tines somewhat similar to those of the prongs of the hay-fork. These tongues are passed through the materials to be cut, and by means of a rope or thong of leather, fastened thereto, and extending below the box, the preser is forced down by the left foot of the person employed in cutting, and the bundle, of course, kept light. By this means the materials are cut into chaff with great ease and facility, the operator raising his left foot after every cut, pushes his feed or bundle forward, with his left hand, then presses it down again with his foot, and makes another cut, continuing to work in this manner, till the whole of the bundle is finished.

Since this, more simple contrivances have been introduced for effecting these different purposes; and lately a lever-bundle has been added, with some other alterations, by which it is supposed that the materials are cut with greater convenience and facility.

In the midland counties, according to Mr. Marshall, a "chaff box" is made use of, which is somewhat peculiar in its constitution, uniting in some measure "the old single-handed machine and the more modern one with a wheel of blades." It has a long upright knife, but feeds itself, in consequence of which the cutter is left with both hands at liberty for the knife. It is regarded as being however somewhat complex, and more suited for a person who makes "flaw-cutting" his employment, than for the servant of the farmer. See Chaff-Cutter.

Cutting- Knife, a tool used by the patten-makers and borer in their artnical engine.

Cutting-Over, in Gardening, the operation of thinning and shortening the branches of different sorts of fruit tree, as the currant, gooseberry, &c. It is necessary to the proper bearing of such skinly fruit trees, that this sort of cutting in or over should be annually performed.

Cutting-Tooth, in Anatomy. See Cranium.

Cuttle-fish, Sepia, in Zoology, a genus of the Vermes Molusca. (See Sepia.) The Sepia officinalis, or common cuttle-fish, when it is in danger of being taken, is said to emit a black liquor like ink, contained in a bag near the coccum, in considerable quantities, whereby the water being obscured, it finds an opportunity of escaping; and from this...
this property it has got the name of the intro-fish. It is not wholly a stranger to our seas, as appears from its bone being found on our shores. It is occasionally caught on the southern coasts of England, but more frequently on those of Italy.

Cuttle-fish bone, Sepia, or sepia, is a white, spongy, tuberculated substance, growing on the back of the cuttle-fish, and seeming almost to be calcined by the sun.

From some experiments lately made by the ingenious Mr. Hatchett upon the cuttle-bone of the shops, he infers, that the term bone is here misapplied, if the presence of phosphat of lime is to be regarded as the characteristic of bone (see Bone): for this substance, in composition, is exactly similar to flint (which see), and contents of various membranes, hardened by carbonate of lime, without the smallest mixture of phosphat. This substance is rough and abractive, and chiefly used in medicine as a dentifrice. It is hard on one side, but soft on the other, so as to receive neat impressions from medals, and to serve for the casting of metals, which thus take the figure of the original. It is likewise used for polishing or cleaning silver. (Leevius Com. P. T. p. 335, & seq.)

M. Chaplet says (Elem. Chem. vol. iii.) that the eggs, the scales, and the black fluid of the cuttle-bone, are still used in medicine. The eggs derange the kidneys, and excite urine and the courses. "The scales and bones are applied to nearly the same uses; they are likewise used as an astringent, and enter into the composition of dentifrice powders, collyria, &c.; the goldsmiths likewise use them to make their moulds for casting spoons, forks, toys, &c., because their spongy part easily receives the impression of metals. 'The black humour of the cuttle-fish may be used instead of ink.' We read in the fatines of Persius that the Romans used it as an ink; and Cicero calls it "astramentum." It seems that the Chinese use it as the basis of their famous ink. "Sepia picea est, qui habet succum nigerrimum involat magnet, quem Chineses cum brodo oriza, vel alterius leguminis, infipiant et formant, et in universum orcem transmittant, sub nomine astramenti Chinensis." (Pauli Hermanni Cynafora, t. i. p. 17, par. 2.) Pliisy was of opinion that the black humour of the cuttle-fish was its blood. Rondellet has proved that it is the bile. This liquor is dried in the bladders, then separated from the membrane, and ground with gum-water. It is used by the Italian artists for tinted drawings, and is in many respects preferable to China-ink. Somnini informs us, (Travels in Greece, &c. p. 416.) that the Greek women use the back-bone as a pin-cushion; and that, in the isle of Scio, they calcine it, and reduce it to a fine powder, with which they blacken their eyebrows. The solid and almost offensive part is the bait with which the Greek fishermen usually garnish their lines, in order to take the eight-armed cuttle-fish (sepia octopus).

Cuttofoe, in Botany, a name given by the people of Guiana to a plant which they esteem greatly for its medicinal virtues. They boil it in water, and give the decoction in all cases of the colic, in which it proves a cure. It is the Helystoma hamatum of Linnaeus, but was formerly supposed to be a species of ononis or anonis; and is well figured and described by Sir Hans Sloane, under the name of anons, non frutica minor glabra procumbens fufe lateo, the yellow-flowered, small, procumbent, smooth anons, without thorns.

It is found in vast abundance on the banks of the Rio Cobre, near the city of St. Jago de la Vega, or Spanish Town. Phil. Trans. No. 132.

Cutts, flat-bottomed boats, built low and commodi-ously, used in the channel for transporting horses. Stow. Annal. p. 412.

Cutts's Island, in Geography, a small island of America, on the coast of York county, in the state of Maine.

Cutrapea, an island in the N.E. part of the bay of Bengal, N. lat. 21° 53'. E. long. 92°.

Cuvagna, a town of Italy, in the territory of Fiumi, belonging to the state of Venice; five miles N. of Udina.

Cuvès, a small town of France, in the department of La Manche, 12 miles N.E. of Honanches.

Cuvette. See Cunette.

Cuviera, in Botany, Rocl. See Elymus Europaeus.

Cuviller, François, in Biography, an architect, who was born in 1698 at Soissons in France. He was educated at Paris, and afterwards went to Munich, whither he was invited by the then elector, who succeeded to the imperial crown by the name of Charles VII. Cuviller was employed by the elector in many public buildings. He continued in the service of the court until his death, which happened in the year 1760; leaving behind him many plans and designs, which were afterwards engraved by different artists, and published by his son, François Cuviller, who was born at Munich in 1734, and succeeded his father as architect to the court. Heinecken.

Cuvilly, in Geography, a small town of France, in the department of the Somme, nine miles S.E. of Mont Didier.

Cuxhaven, a small town of Germany, in the district of Ritzhuttel, to which it is so contiguous that it appears the same place, situated on the mouth of the river Elbe, and belonged formerly to the city of Hamburg, but is at present in the possession of the French. It is a small but convenient harbour, and affords a safe retreat, or a good anchorage in the roads, to vessels outward-bound detained by contrary winds. After the conquest of Holland by the French, regular English packets used to sail betwixt Harwich or Yarmouth and Cuxhaven, until the latter place fell likewise into their hands at the renewal of the war in 1803.

Cuyaba, a mining station in the interior of Brazil, seated on a river of the same name, which joins the river Paraguay beneath the marsh of Xaraes.

Cuyck, a town of Brabant, in a small territory of the same name, of which Grave is the capital; four miles E.S.E. of Grave, and twelve W. of Cleves.

Cuyenburg, in Biography, a painter of the 17th century, who is said by some to have been a disciple of Cornelius Poelenburg, whom he appears to have imitated as well in the choice of his subjects as in the manner of executing them. He is, however, inferior to his model. A brown tint too generally pervades his pictures, which are upon a larger scale than those of Poelenburg, and are deficient in that correctness of design and delicacy of finish, which characterize the genuine productions of that esteemed artist. Pilkington.

Cuyo, in Geography, a province of South America, in the viceregency of La Plata, or Buenos Ayres, situated amidst the mountains which extend from the great chain towards Cordova, but having many fertile valleys; as it is separated from Chili on the west by the Andes, the administration is annexed to that of Cordova. Its chief town is St. Juan de la Frontera. This province produces in great abundance grapes, figs, pears, apples, and most kinds of European fruits, which form the chief articles of its trade. Wines, brandy, and dried fruits, are also carried to Buenos Ayres, Cordova, and other parts of the four intendences.
The mountains of Cyu and Rignabout in metals; but the palls are difficult, so that there is no inducement to work them. In the northern part of the same chain are many flocks of vicunas, whose wool is sometimes wrought in the country, but chiefly sent to Europe, where it is celebrated as the finest of all in broad cloths, uniting the gloss of silk, with the firmness and warmth of woollen, while the native fawn-colour can scarcely be exceeded in beauty.

CUYP, in Biography. See Keyr.

CUZCATLAN, in Geography, a river of New Spain. See St. Sebastian River.

CUZCO. See Cusco.

CUZEUZ, a small town of France, in the department of Saône and Loire; 15 miles S.E. of Louhans, and 36 of Chalons.

CUZUMEL, an island of America, in the province of Yucatan, and attendance of Mexico, situated in the bay of Honduras; 15 leagues long and five broad; its principal town is Santa Cruz, which lies N. lat. 19°. W. long. 89°.


CYAMEA, in Natural History, the name by which the ancients call the black flinty eagle-bone. Many deferibe its blackish colour, and says, that when broken, there was found within it another flint of the biggest of a horne-bone. This is what rattles in it when shaken.

CYAMON, in Ancient Geography, a promontory of Crete, according to Ptolemy, thought to be the present Cape Spada.

CYAMOSORUS, a river of Sicily, in the environs of the town of Centurius, according to Polybius; supposed to be the present Trinina.

CYAMUS, in Botany, (σαμος), originally the Greek name of a plant, which appears to be not specifically different from our common cultivated bean, afterwards extended by Theophrastus and other writers to the plant now before us, on account of a fancied resemblance in the seeds.) Smith Exot. Bot. p. 59. Salisbury in Annals of Botany, vol. ii. p. 79. (Nelumbus; Gært. 85. Nelumbium; Juss. 68. Vent. ii. 216. and iv. 32. Poir. in Encyc. Wild. 1075.) Clas and order, polyandria polyandra; Nat. Ord. Succulentia; Linn. Hydrocharides; Juss. Nymphae Salis. Gen. Ch. Receptor, invercely conical or top-shaped, truncated, honey-combed or hollowed into numerous cells, which are open at the top. Cal. Perianth four or five, or, four-leaved, inserted into the receptacle, permanent. Cor. Petals generally numerous, inserted into the receptacle, much shorter than the corolla, curved. Pist. Germis solitary in each cell of the receptacle; styles splayed, very short; stig- mas simple. Seeds solitary, attached by a short umbilical cord to the bottom of each cell, and appearing above the top, globular or oblong, resembling nuts, within the permanent style.

Eff. Ch. Calyx of four or five leaves. Seeds half im- mersed in a cellular receptacle, each crowned by its own style.


“Leaves petalate, orbicular, quite entire; peduncle and peduncle mucrate; corolla polypetalous.” Willd. “Leaves lobed, undulated, plated, nerves underneath umbellate.” Poir. 8. Nelumbo indica; Poir. Lam. Ill. Pl. 455. Tamara; Rhed. Med. 11. 59. tab. 30, and Bern. Tamara, 11. 61. tab. 31. “Leaves flat, quite entire, with two opposite indentures, each of which has a mucronate projection in the middle.” Poir. Root perennial, large, tuberous, black without, white within, throwing out numerous long fibres. Stem none. Leaves radical, smooth, rather glau- cescent, with many concentric radiating ribs; when young, floating on the water; when full grown, rising three or four feet above it, and becoming two or three feet in diameter, concave, variously waved, twirled or torn by the wind; petals long, cylindrical, prickly, upright. Flowers on simple naked peduncles, resembling the petals, but rather taller; solitary, upright, very handsome and fragrant, eight or ten inches wide when fully expanded, lasting for several days; calyx-leaves four or five, green, egg-shaped, concave; petals numerous, in several ranks, differing in size, sometimes white, but most commonly of a delicate pale-rose-colour, white, marked with many crimson longitudinal ribs, which drawing nearer together as they approach the- top, render that part of a deeper hue; stamens numerous, yellow, filiform, knobbed; anthers oblong, lateral, germ protruding through the orifice of the cell; stigma oblong, obtuse, perforated, yellow. Receptacle finally concave, separating from the flalk, and floating down the water, laden with ripe oval nuts or seeds, which vegetating, ren- der it a cornucopia of young sprouting plants, till at length breaking loose from their confinement, they take root in the mud. The pedicels are divided internally into several longitudinal tubes, containing a thick, whitish, gummy fluid, which condeisces when exposed to the air, and draws out into long threads, like those which are spun by a spider. The variety 8 is considered by Poiret as a dif- ferent species; but appears to differ chiefly, if not entirely, in the shape of the leaves. A native of the East Indies, Cochinchina, China, Java, &c.; in many parts of which it is esteemed a valued plant, and makes a conspicuous figure in their mythology as the symbol of fertility. It was known to the Greeks; and is said by Herodotus, Theophrastus, and others, to be a native of Egypt: but no modern traveller has any doubt of its having actually existed there, since the terms in which it is described by those authors, are too clear and definite to be mistaken; and their accounts are con- firmed by ancient Egyptian sculptures and monuments which are still preserved, and testify that from the earliest times, it, as well as the proper lotus, has obtained a religious reverence. It is remarkable that neither Herodotus nor Theo- phrastus, the most ancient Greek writers, by which it is de- scribed, have attributed to it a sacred character; but only speak of it as used by the Egyptians for food. The forme- dittiglishes it by no particular name, but gives both to it and the lotus the common denomination of lily, a term which appears to have been applied by the Greeks to various plants with large conspicuous flowers. Having observed that a gaffe is made of the pith of the lotus, and baked in bread, he adds, there are also in the river other flowers, resembling a rose and bearing a fruit very like a vesp's nest, which contains numerous cecilius seeds in about the size of the stone of an olive, that are eaten both raw and roasted. A total want of botanical knowledge has caused both our English translators, Littlebury and Beloe, to mistake the meaning of the original with respect to the formation of the fruit. Littlebury places it at the foot of the stem: Beloe,
by a still greater blander, says, it grows from the bottom of the root, where we believe no proper root ever grew. The words of Herodotus are, Σαπροίκον τατηρ ρήσσα, meaning, no doubt, that the seed of the flower, as well as of the leaves, springs directly from the root, without the intervention of a stem; though it is expressed too concisely to be easily understood, by those who are not acquainted with the plant. Theophrastus describes the plant more fully in the beginning of the tenth chapter of his fourth book, and calls it simply ἐνυκον; without any determining epithet; but he could not have confounded it with the well known Æsopus, or bean of his own country, which he mentions in various parts of his work, and particularly describes in his eighth book; and which appears by unequivocal characters to be of the leguminous kind, and not essentially different from our common cultivated bean. To prevent confusion the exotic plant was generally called by subsequent authors ἀναπυκον, the Egyptian bean, and is expressly said by Strabo to be so called, because in its fruit it resembles the Grecian bean, differing only in size and taste; κυπον κυπον της ἑκείου νησίου της Ἥλληνος ἐνυκον ἐνυκον ἐνυκον. According to Dioscorides it was sometimes called the Pontic bean, and is said to be a native not only of Egypt, but also of Asia Proper and Cilicia. Theophrastus had said before that it grew, though it did not attain to its proper perfection, in Syria and Cilicia; and had even added, that it completely ripened its fruit in a lake near Troence in Chalcis. But in all these situations some species of nymphaea must certainly have been taken for it.

Dr. Smith has started an ingenious, and we believe, perfectly original conjecture, that the plant before us is the real mythical bean of Pythagoras, concerning the prohibition of which to his followers so much has been written and so little determined. He supposes that this celebrated philosopher imbibed the notion of its sacred character during his travels in India, if he actually went thither, or else in Egypt at fecond land from India, and that afterwards, when he propagated his acquired philoponys in Samos, Greece, and Italy, he took as a substitute for it, since it did not grow in his own country, a common seed resembling it, which the common horse bean does very nearly. He consequently understands the famous prohibition in a literal, not in a figurative sense. The total disappearance of the plant from modern Egypt favours the idea that it was not indigenous there, but brought from India. And we should find but little difficulty in acceding to the opinion of our learned friend if we had not very strong doubts concerning the truth of the modern doctrine which derives the mythology of Egypt from that of India; but after all we have read on the subject, we do not scruple to confess that this doctrine appears to us to be in all its parts unfounded.

However that may be, we entirely agree with him in preferring the classical cyamus to the barbarous nelumbo or nelumbium; as the former name has not hitherto been appropriated in modern botany, and as it is certainly applied to our plant, by the Greek writers, though not in an exclusive, or as a primary sense. The root and the seeds are now used in the East Indies as articles of food, in the same manner as they formerly were in ancient Egypt. The root, having been called colocasia by some Greek writers, has sometimes been mistaken for the modern colocasia of the flaxies, which is the root of arum colocasia. 2. C. luteum. Salib. Ann. bot. 2. (Nelumbium luteum; Wild. 2. Nymphaea Nelumbo. 3. Linn. Sp. Pl. N. glandulifera virginiana; Moris hift. 3, 513. Pink. Alm. 567.) "Anthers rising above the cells, linear." Salib. "Leaves petiolar, orbicular, quite entire; peduncles and pedioles smooth; corolla polypetalous." Wild. "Flowers pale yellow. Mr. Salisbury affirms that the pedicels are prickly and not smooth, as Willdenow describes them. A native of the rivers in Virginia, Carolina, and Florida. 3. C. pteropetalum. (Nelumbium Wild. 3. Nymphae; Walt. Car. 155.) "Leaves petiolar orbicular, quite entire; calyx five-leaved; corolla with three petals." A native of Carolina. Mr. Salisbury thinks that the genus of the last two species is not sufficiently ascertained.

Propagation and Culture.—The first species has flowered lately in several of our collections, but though he bears some cold of Pekin, it has not hitherto been successfully cultivated with us out of the flower. It requires a deep soil with a considerable depth of mud for its roots. The seeds prefer their vegetable life for many years.

CYANA, Renel. See Gentiana pneumonanthe.

CYANAE, or CAYANIAN ISLANDS, islands or rather isles of the Euxine sea, at the mouth of the Dophinos of Thrace, one lying on the coast of Europe, another on the coast of Asia, at the distance of about 20 stadia. At present they are very small rocks, so that their size has probably been diminished by the attrition of the waters. These rocks were also called "Syplogades," because they appeared to be united or joined, according to the place from which they were viewed. Being more or less visible, as the north or south wind raies or lowers the waters in this part, the Greeks, always inclined to the marvineus, have supposed that these isles were floating, and very dangerous to imprudent or inattentive mariners. On one of these rocks, that near the coast of Thrace, the Romans erected an altar to Apollo; which, at Constantineople, is improperly called "Pompey's pillar."

CYANECULA, in Ornithology, a name given by Bridgen to the blue-throated warbler, or Motacilla Sucia; which fee.

CYANELLA, in Botany, (diminutive of cyanus, blue, alluding to the colour of the flowers.) Linn. Gen. 422. Schult. 576. Wild. 64. Gart. 79. Publ. 2. 194. Gen. Ch. Cal. 3. 11. Petals six, cohering by their claws, oblong, concave, spreading; the three lower ones hanging forwards. Stam. Filaments fix. contiguous at the base, very short, somewhat spreading; the lower one dished, and twice the length of the others; anthers oblong, erect, diluent at the tip, with four obtuse teeth. Pet. Germ trigonous, obtuse; style 1, long, declined, the length of the lowest stamen; stigma rather acute. Peric. Capsule roundish, three-turrowed, three-celled, three-valved. Seeds several, oblong.

Eff. Ch. Corolla with six petals, three lower petals hanging forward; lowest stamen declined, longer than the others.

almost horizontal; anthers yellow, five very short, erect, incurved, the sixth longer, grooved; style incipient on the longer anther. "The bulbs, which are about the size of those of crocus vernus, are said to be eculent when rotted.

A native of the Cape of Good Hope, at the foot of the Table mountain. 2. C. orbichilosis. Willd. 2. Jacq. 1c. Kar. 2. tab. 447. "Stem branched; racemes erect; lem-leaves sword-shaped, stiff and straight; root ones egg-shaped." Leaves glaucous, cartilaginous, and finely toothed at the edges. Flowers violet-purple; three of the petals and three of the filaments erect, the three others of each deflexed. A native of the Cape of Good Hope. 3. C. lutea. Linn. jun. Suppl. 203. Mart. 1. Linn. 2. Willd. 3. Thumb. Act. Holm. 1794. tab. 7. fig. 1. "Scape somewhat branched; racemes erect; leaves linear-lanceolate, flat." Flowers yellow, larger than those of C. canepis, with longer peduncles; filaments united at the base, as in that species, but three of them erect, and three, which is longer, deflexed. A native of gravely inundated fields at the Cape of Good Hope. 4. C. alta. Linn. jun. Suppl. Mart. 3. Willd. 4. Thumb. Act. Holm. 1794. tab. 7. fig. 2. "Scape one-flowered; leaves filiform." A filiform bract at the middle of the scape. All the filaments erect, except the larger one. A native of the Cape of Good Hope.

Cyanella, in Entomology, a species of Cryptocephalus.

Cyanella, in Ornithology, a species of Emberiza.

Cyaneeus, in Ancient Geography, a river of Asia, in the territory of Cilicia, now called Chana.

Cyanus, in Zoology. See Coller.

Cyanoides, in Botany. See Centaurea multiplicata, n. 132.

Cyanometer, (from cyan, chryseus, aurus, and metra, mensura, a measure;) is the name given by M. de Saussure to an instrument which he contrived, for the purpose of estimating the intensitets of the blue colour of the sky. This instrument is nothing more than a circular band of paper, or paste-board, divided into 51 parts, each of which is painted with a different shade of blue; beginning with the deepest, which is mixed with black, and gradually proceeding to lighter and lighter shades, as far as the lightest, which is mixed with white. By alternately looking at the sky and at the different shades of blue on this instrument, one may easily determine which shade of the latter agrees with the actual colour of the sky; and thus the various intensitets of the aerial blue, as it appears at different times, or from different altitudes above the surface of the earth, may be ascertained, compared, &c.

That the blue colour, which we observe in the heavens, belongs to the atmosphere of the globe we inhabit, is easily proved from evident facts: the principal of which are, that the hither the observer is situated, the darker does the colour of the sky appear to be. M. de Saussure finding that it corresponded with a deeper shade of blue on his cyanometer, the higher he ascended above the surface of the earth; hence concludes, that, at a certain height, the blue will disappear altogether, and the sky will appear black, viz., it will reflect no colour whatever.

Another proof of the blue colour being reflected by something below the moon, (and that something can be nothing else besides the air of our atmosphere,) is that when the moon is in her quadratures, or nearer to the sun, that part of it which is not illuminated by the sun will appear blue like the rest of the sky, to an observer who directs his eye to it in the day-time; whereas, if the blue was reflected by something beyond the moon, the above-mentioned part of the moon would not appear of that colour.

This blue colour of the sky is supposed to be produced by the blue, indigo, and violet rays being more evenly reflected than the other component rays of white or solar light. And it has been observed, that the colour of the sky becomes always lighter, in proportion to the quantity of sanguine vapour that happens to be mixed with the air; whence it evidently appears, that the colour of the sky is owing to the refraction from those vapours. And it also appears, that, by the use of the cyanometer, an attentive observer may be enabled to guess pretty nearly at the quantity of water actually dissolved in the air; on which account, the cyanometer ought to be added to the barometer, thermometer, and other instruments of a meteorological observatory.


Cyanus ethiopicus; Pluk. See Protea cyanoides.

Cyanus olpinus; Bocck. See Centaurea uniflora.

Cyanus arborescens altera; Alp. See Stelchelina arborescens.

Cyanus arborescens minor; Breyn. See Lopatrium divaricatum.

Cyanus caule uniflora; Hall. See Centaurea montana, n. 47.

Cyanus caule uniflora minor; Breyn. See Pteronia oppositifolia.

Cyanus eruc folio; Bof. See Centaurea romana, n. 84.

Cyanus folis ellipticis dentatis; Hall. See Centaurea lindigiana, n. 117.

Cyanus folis inus ellipticis; Hall. See Centaurea cyanus, n. 48.

Cyanus folis pinatissi; Hall. See Centaurea scabiosa, n. 62.

Cyanus folis fimbriatis; Hall. See Centaurea phrygia, n. 68.

Cyanus borntsi; C. Bauh. See Centaurea cyanus, n. 48.

Cyanus montanus caule foliato; Bocck. See Centaurea montana, n. 47.

Cyanus montanus latisfolius; C. Bauh. See Centaurea montana, n. 47.

Cyanus major; Lob. Blackw. See Centaurea montana, n. 47.

Cyanus orientalis major; Morch. See Centaurea mrc-cha, n. 5.

Cyanus repens; Lob. See Centaurea amara, n. 19.

Cyanus repens anthus; C. Bauh. See Stelchelina frutescens.

Cyanus repens latisfolius; C. Bauh. See Centaurea amara, n. 19.

Cyanus fegatum; C. Bauh. See Centaurea cyanus, n. 48.

Cyanus spinifus; Alp. See Centaurea spinifus, n. 53.

Cyanus vulgaris; Lob. Blackw. See Centaurea cyanus, n. 48.

Cyanus, in the Natural History of the Ancients, is used to express two different substances. The one, the lapis lazuli; the other, the lapis armenius, a substance used by the painters in its native state, and very improperly called a stone, being a mere earth, and being truly to copper, what yellow ochre is to iron.

Cyanus, in Ornithology, a name given by Bell, Gein., n. Q.2
ACY

Alder, Ray, and Will, to the solitary sparrow of Edwards, and blue thrush of Latham; the *Turdus cyanus* of Gmelin; which see.—Alts, a species of *Parus*; which see.

**Cyamus**, in Zoology. See *Musc.*

**CயョRA**, in Ancient Geography, a town of Asia Minor, in Caria. Steph. Byz.


“Trunk frutification scattered, roundish, standing in an hemispherical calyx, which bursts at the top without an operculum.

Eff. Ch. Involucrum going under the receptacle of the capfulles, either entirely like a cup, or partially on one side.

Sp. 1. C. horrida. (Polyodium horridum; Linn. Sp. Pl. 57. Felix ramosa; Pet. Fil. 50. tab. 5. fig. 1. Lath. folia ramosa; Plum. Amer. 3. tab. 4.) “Trunk thorny; frond bipinnated and pinnatifid; segments acuminated, ferrated at the tip, flowering near the margin, furnished with intercalifying veins at their base. A native of Hispaniola and Jamaica. 2. C. multiphora. “Trunk unknown; frond bipinnated and pinnatifid; segments obtuse, ferrated; stalk winged; flowers scattered; calyx torn.” A native of Jamaica, communicated by Dr Joseph Banks. 3. C. arbores. (Polyodium arboreum; Linn. Sp. Pl. 55. Felix arborescens; Plum. Fil. 1. tab. 1. Am. 1. tab. 1. Pet. Fil. 41. tab. 1. fig. 1, 2.) “Trunk arborecent, fealy; frond bipinnated; leaflets sessile, ferrated, with many flowers at their base; calyx entire.” A native of Jamaica. 4. C. capenfis. (Polyodium capenfis; Linn. jun. Supp. 445.) “Frond tripinnated; leaflets sessile, acute, ferrated, bearing a solitary flower at their base; calyx torn.” A native of the Cape of Good Hope. 5. C. fragilis. Smith Flor. Brit. 1. Eng. Bot. 1587. (Polyodium fragile; Linn. Sp. Pl. 51. Bolt. Fil. 59. tab. 27. and 46.) “Frond bipinnated; leaflets pinnatifid, sharply and deeply ferrated; fructifications a little dilatant; calyx torn; common flasks winged.” Root perennial, tufted, crowned with brown scales. *Fronds* from four inches to a foot high, delicate and tender, lanceolate, acute, smooth, bright green; stalk blackish, smooth, brittle; leaflets alternate, cut, most frequently pinnatifid, sometimes irregularly egg-shaped, more generally lanceolate, pointed, with more or less zig-zag nerves; dots of fructification numerous, alternate, brown or black, not confluent except when old. Involucrum cup-shaped, bursting laterally, jagged, at length reflexed and obliterated. No fern varies more in the number, form, and breadth of its subdivisions. When large, most compound and finely cut, it is the polyodium rhæticum of British writers, but not of Linnæus. When smaller and less compound, it is the P. ilvene of Ray’s Synopsis. Dr. Smith. A native of rocky places and buildings in the mountainous parts of Britain, and the continent of Europe. 6. C. regis. Smith Flor. Brit. 2. (C. incifa; Eng. Bot. 1653. Polyodium regium; Linn. Sp. Pl. 52. Adiantum nigrum, pinnulis cicatricum divitiora; Rau. Syn. 125.) “Frond bipinnated; leaflets lobed, obtuse, without a brightly point, quite entire at the edges; calyx torn; stalk slightly winged.” Root perennial, fealy. *Fronds* four or five inches long, lanceolate, smooth, fine green; dots of fructification nearly as in the preceding species, but smaller. A native of France and Britain, on walls and alpine rocks, but rare. 7. C. donata. Smith Flor. Brit. 3. Eng. Bot. 1588. (Polyodium; Dickl. Crypt. Falc. 5. 1. tab. 7. fig. 1.) “Frond generally bipinnated; leaflets egg-shaped, obtuse, deeply and bluntedly toothed, pointless.” About the size of the preceding. *Fronds* lanceolate, acute, smooth; leaflets with zig-zag nerves; common stalk winged only towards the top; dots of fructification numerous, approximate, some becoming confluent; involucrum half way round, fringed. Rocks and stony places, and the Highlands of Scotland. 8. C. montana. (Polyodium; Alston. Pl. 2410.) “Frond in three divisions, each bipinnated and pinnatifid; segments slightly crescent-shaped, toothed at the tip; stalk winged; flowers scattered; calyx torn.” A native of the Alps of Europe.

Ofw. We are authorised by Dr. Smith to state, that his idea of this genus has not been understood by f-me German botanists, who have taken the less certain species (fragilis, regia, &c) as examples of the genus, and thence made a new genus of the primary cyathea (arborea, &c.). We are happy to add, that Dr. Smith has in contemplation a full investigation of the subject, which will be presented to the Linnean Society, and doubtless in due time be published in their Transactions.

**Cyathodes**, Rudge, Linn. Trans. 8. 293. See *Stypelia*.

**Cyathus**, from λυων, to pour out, in Antiquity, a liquid meafure among the Romans, being the twelfth part of the sextarius. It only held as much as a man could eafily drink at one draught, and was divided into twelve parts, called unciae.

**Cyathus**, in Botany, Hall. Juff. See *Nidularia*.

**Cyathus**, in Ancient Geography, a river of Greece, in Ætolia, near the town of Arrhinoe.

**CyaXareS I.**, in Biography, king of the Medes, who succeeded his father, Phraortes, B.C. 635, was a prince of great courage, extraordinary abilities, and devoted to the military profefjon. In the preceding reigns, much of the kingdom had been conquered by the Assyrians; but, by the prowess and skill of Cyaxares, it was reftored. He not only defeated his enemies in a battle, on which almost every thing depended, but laid siege to Nineveh their capital. Scarcely, however, had he attained this object, when the Scythians successfully invaded his country, and made themselves masters of Media, and a great part of Upper Asia, which they held for nearly 30 years. Weary of their oppression, Cyaxares resolved to free himself from them by stratagem. He accordingly invited them to a general feast, which was given in every family; and when they were off their guard by intoxication, he caused a magistrate to take place, and thus freed himfelf from his enemies. He then attacked the Lydians for having aided or succoured the fugitive Scythians. These, however, were not easily subdued; and after five years’ war, which was carried on with various success, a most obstinate engagement took place; but a total eclipse of the sun, which happened during the heat of battle, had an powerful effect on the superstition of both parties, that with one accord they retracted: peace was concluded, and a marriage was brought about between the daughter of the Lydian king and Altyages, the eldest son of Cyaxares. This business being settled, Cyaxares entered into a flrict alliance with Nebuchadnezzar, king of Babylon; and, in conjunction with his new friends, he reftored the fiege of Nineveh, slew Sarac the king, and excel- leved that proud metropolis with the earth. This important circumstance gave rise to the great successes of the allied monarchs, and laid the foundation of the collateral empires of the Medes and Babylonians. Enriched with the plunder of very many subjugated nations, they divided their forces, Nebuchadnezzar purfuing his conquests in the west, and Cyaxares falling upon the provinces of Armenia, Pontus, and
and Cappadocia, which he subdued with great slaughter of the inhabitants. After these achievements, the arms united again, and completed the conquest of the Assyrian empire. Cyaxares died in the 40th year of his reign, and was succeeded by Alyattes; upon whose death, in 560 B.C.,

Cyaxares II., son of Alyattes, and uncle to Cyrus, succeeded to the throne. This prince is supposed to be the same with "Darius the Mede," mentioned in the Old Testament. In concert with his nephew, Cyaxares, after the reduction of Babylon, arranged the affairs of the new empire, and divided it into 120 provinces, which were entailed on the care of those persons who had distinguished themselves during the war, over whom three presidents were appointed; the prophet Daniel, on account of his age, experience, and great wisdom, being the chief. Cyaxares reigned in conjunction with Cyrus till the year 536 B.C., when he died. Universal Hist. Xenophon.

CYBELE, in antiquity, a kind of ship used in commerce, of a roundish form.


CYBATE, Waspith, a town of Asia, upon the right bank of the Tigris, S.E. of Seleucia, and N.W. of Apamea.

CYBELE, in Mythology, a heathen goddess; who, according to the Roman mythology, was the daughter of Celus and Terra, or heaven and earth, wife of Saturn, and mother of the gods.

The Greek mythologists pretend that she sprang from one of the stones used by Deucalion and Pyrrha for re- populating the earth after the deluge. The Phrygians affirm that she was daughter of their first king Meon, debauched by Atys, whom her father caused to be put to death; and that the afterwards wandered with Apollo to the country of the Hyperboreans. Cybele, as the Phrygian fable reports, on occasion of the death of Atys, was feized with phrenzy, and filled the woods and mountains, wherever she went, with her lamentations. A plague soon after laying waste the country, the oracle, which was consulted, advised to bury Atys with great pomp, and worship Cybele as a goddess; but his body, which had been thrown to wild beasts, not being found, they made a statue of him, which they attended with howlings and funeral ceremonies. A magnificent temple was erected to Cybele in the city of Pallium; and lions were placed at her feet, in commemoration of her having been nourished by these animals, when exposed in her infancy on mount Cybelus. The worship of the earth was very ancient, and the origin of it has been fought in Phrygia; for it was not received in Europe till the time of Cadmus, who transferred it from Asia; and Dardanus, it is said, who was contemporary with Cadmus, repaired with Cybele, represented as his filler-in-law, and Corybas his nephew, into Phrygia, where they introduced the mysteries of the goddess Earth, or great mother goddess, to whom was given the name of Cybele, as was that of Corybas to the Corybantes, his priests. In Italy this deity was unknown till the time of Hannibal; when the Romans, consulting the Sibylline oracles, found that this formidable enemy could not be expelled unless they brought the Idæan mother, or Cybele, to Rome. The senate, therefore, dispatched embassadors to Atys, king of Phrygia, and obtained from him the statue of this goddess, which was of ivory, at the city of Pallium, in Galatia. Accordingly she was brought to Rome, with singular ceremonies, and introduced, according to the Sibylline order, by the best man of the city, whom the senate adjudged to be Publius Scipio.

Cybele, besides other appellations by which she was distinguished, was named Cubbe, because her priests, when seized with their frantic fits, used to throw themselves on their heads; from the Greek verb κυβερνεῖν, in caput protvoli.

She was also adored under the names of Ops, Rhea, Vesta, the Good Goddess, Marpamene, Bereynthia, &c. and was called Cybele from mount Cybelus in Phrygia. She is represented in a chariot drawn by four lions, her garments flowered, a key in her hand, and a torrent on her head.

Allegorists by Cybele mean the earth, and her crown of rivers they consider as an emblem of the towns and cities built upon it; the key held in her hand denotes that the earth, which the winter, as it were, locks up, begins to open in the spring; and her garment, variegated with different flowers, is a symbol of the earth beautifully enamelled with these productions; the lions that draw her chariot signify her empire over all sorts of animals which the produces and cherishes; the ride in a chariot, because, as it is fancifully said, the earth is suspended in the air; and the chariot is supported by wheels, because the earth is a revolving body. Under the character of Vesta, she is generally represented upon ancient coins in a sitting posture, with a lighted torch in one hand, and a sphere or drum in the other. Varro, cited by St. Austin, (De Civ. Dei,) gives the following explanation of the appellation and attributes of Cybele: she is called the mother of the gods; the drum, which is ascribed to her, represents the globe of the earth; the turrets, its towns and cities; the seats that surround her shew, that she only stands still when all things are in motion about her; her eunuch priests denote, that the earth must be married in order to produce corn; their agitations before the gods teach husbandmen, that they must not lie still; the sound of cymbals denotes the noise of the instruments of husbandry; and the tame lions intimate, that there is no soil so wild and barren, that may not be married. Eusebius and some others are of opinion, that Cybele was a woman whose skill in remedies against distempers to which young children are subject, and that all the stories relating to her are grounded on this faculty which she possessed.

Cybele had her peculiar priests, ceremonies, and sacrifices. Her priests were called, in the Phrygian language, Cubbe; the Greeks and Latinas styled them Cabiri, Corybantes, and Galli, from the river Gallus, which flowed through Pessinus above mentioned. They were also styled Idzi Dačtyli. The ceremonies performed by their priests in honour of the goddess were these: at stated times they carried her statue about the streets, dancing and skipping round it; and after having by violent gesticulations worked themselves into a kind of phrenzy, they began to cut and slash their bodies with knives and lancets, in commemoration of the grief of Cybele at the loss of her beloved Atys. The victims immolated in honour of the Phrygian goddess were bulls, or she-goats, whence the sacrifice was called "Taurobolium," or "Cricobolium." At Rome a few was annually sacrificed to her; and the ceremony was performed by a priest and priestesses sent out for Phrygia on that occasion. Her priests (at least those designated by the name of Galli) were all eunuchs, in memory of Atys, who was said to have deprived himself of his virility; and the waters of the river Gallus were supposed to inspire them with such frantic enthusiasm, that they unrelentingly performed the necessary operation on themselves. They were forbidden wine, because Atys, overcome with it, disguised his amours with Acadetis, which he had before carefully concealed.
They abstained from bread, in commemoration of the long fast which Cybele kept after the death of Attys. They held all oaths to be unlawful; and after their death, these priests were placed on a turn 13 cubits high. The rites of Cybele were not less infamous for their lewdness than for their cruelty. Her festivals were celebrated with a confused noise of timbres, pipes, and cymbals; and accompanied with howlings, and obscenity both of language and gesture. The animals sacrificed to her were the bull, goat, and fow, as symbols of fecundity; and the box and pine were sacred to her:—the former, because the pipes used at her festival were made of that wood; and the latter, for the sake of Attys, or Attys, the Phrygian youth, already men- tioned, who was beloved by her, and made professed of her rites, but who, having violated a vow of chastity, was turned by her into the pine-tree.

Cybele was one of the chief goddesses among the ancient Gauls, and particularly venerated in the city of Autun, where her priests were castrated in honour of her, and hence called Galli. However, if the worship of Cybele was introduced into Gaul, it was either by force, or in servile imitation of that of the Greeks and Romans. Smith was the abhorrence with which the Gauls regarded all mutations, that they would never voluntarily have adopted a kind of worship, which required every priest, and encouraged every volatity of the goddess, to become an eunuch. Besides, the Galli were held in such abhorrence, that no other people would maintain any intercourse with them; and they were placed on a level with forcerers, gladiators, and executioners, so that they fulfilled merely by carrying about their goddesses, and beggars charity for her sake:—a discipline which was entirely opposite to the genius of the Gallic nation. Indeed, St. Jerome intimates, that the Romans forced this emaculated priesthood upon the Gauls, and called these eunuchs Galli, in order to fix a perpetual ignominy upon that nation, for having taken their metropolis, and beheld their capital.

**CYBELE, Mons, in Ancient Geography, a mountain of Phrygia, which gave name to Cybele, the mother of the gods. We may infer that this mountain was not far from Caphane, towards the source of the Meander, from a verse of Ovid:**

"—Vividem Cybelam atque Caphanam."

**CYCLEIA, a town of Asia Minor, in Ionia; probably the same with Cycellia of Strabo.**

**CYEBILICUM MARMOR, a name given by the ancients to a species of marble, dug in a mountain of that name in Phrygia. It was of an extremely bright white, with broad veins of a blueish black.**

**CYBISTRA, in Ancient Geography, a town of Asia, in Lesser Armenia, reckoned by Hierocles in the number of episcopal cities in the second Cappadocia. It was situated south of mount Argeus.**

**CYBOMANTIA, a species of divination performed by lots.**

**CYBRASA, in Ancient Geography, a town of Asia Minor, in Caria.**

**CYBUS, a town of the Phoenician Libya, belonging to the Ionians.**


**Gen. Ch. Male flowers in a terminal oval-oblong catkin, resembling a frutile. Cal. Scales imbricated, fleshy, spatulate or oval, ending in a weak point. Cor. none. Stam. Filaments none; anthers numerous in each scale. Female flowers on a separate plant. Fronds numerous, terminal, somewhat compressed below, dilated above, chaffered. Fil. Genus scraped, on the edges of the frond; style short; stigma simple, permanent. Peric. Drupe speckle-shaped, outer coat fleshy; nut woody, one-celled; kernel rounded, firm.**

**Eff. Ch. Male catkin resembling a frutile. Anthers numerous, fleshy. Female flowers numerous, terminal, somewhat compressed below, dilated above. Drupes fleshy, on the edges of the frond.**

Obs. This genus and zamia feem to constitute an intermediate order between the ferns and the palms. They resemble the former in the mode of their formation; but, in other respects, have all the proper characters of a palm. Linnaeus erroneously describes the pollin of cucas as naked, i.e. not enclosed in an anther.

**Sp. 1. C. cirrhatis. Linn. Sp. Pl. Mart. 1. Lam. 1. 11. Pl. 691. (Todda-pana; Rhed. Mal. 3. 9. tab. 13—21. Rai Hist. 1350. Ours calappophes; Rumph. Amb. 1. 86. tab. 239, 2. Arbor zago ammonitis; Sb. Thelf. 1. 39. tab. 25. fig. 1.) "Leaves pinnaed; leaves linear, flat, not purgent at the tip, slightly curved downwards; common petals prickly beneath the leaves." Trunk thick, generally short, scaly: sometimes from fifteen to twenty feet high, with numerous annual protuberances, and divided at the summit into a very few short branches. Leaves crowning the trunk, three feet long or more; leaves numerous, very near together Male catkins terminal, within the leaves, solitary, sometimes very large, fleshy, having some resemblance to a large pine-apple. Fronds bearing the females numerous, terminal, within the leaves, coriaceous, woolly, fove-shaped, expanded upwards, inwards, at the edges of the middle, jagged near the summit, and ending in a long sharp point. Fruit about the size of a small orange, reddish-yellow, slightly compressed. A native of the East Indies, and of the islands in the South Sea. 2. C. revoluta. Mar. Syn. Veg. 2. Mart. 2. Lam. 2. Thurl. Flor. Jep. 259. Smith. Linn. Trans. 6. 312. tab. 29, 30. (Tufflo; Kembre, Amer. 897. Arbor calappoedes tiglijista; Rumph. Amb. 1. 92. tab. 24.) "Leaves pinnaed; leaves narrow, revolute at the edges, slightly curved inwards, pungent at the tip; common petals prickly underneath the leaves." Trunk cylindrical, branched, five feet high or more, nine or ten inches in diameter, brown, very fey with the remains of old petals. Leaves four or five feet long, crowning the trunk, and forming a magnificent banton ten or twelve feet broad at the top. Fruit-bearing fronds numerous, terminal, within the leaves, forming a kind of frutile or cone, at first hollow like a bird's-nest, finally rather convex; from six to eight inches long, fleshy, entirely covered with a pale brown thinly down; flatish and flake-like towards the bottom; bearing on each edge about the middle a row of three or four fesse drupes, dilated at the extremity into a pinnatifid, or rather palmate many-fingered leaf, whose lobes are generally turned inwards, and tipped with a spine. Fruit nearly as large as an apricot, of a rich orange hue, and clothed with a wonky down which easily rubs off, somewhat obovate or elliptical, a little compressed, tipped with a minute rigid point formed of the permanent stigma; outer coat coriaceous; nut elliptical, hard, whitish, tipped with a point connected with the stigma, and internally inled with a loohe brown membranous integument, closely enfolding a white, firm, uniform kernel, which completely occupies the shell, and confits entirely of albumen. A native of Japan. This species..."
Cyc

species produced fruit, for the first time in England, in the autumn of 1709, at Farnham castle in Surrey, the feat of the honourable and right reverend Dr. North, bishop of Winchetter, where it was seen by Dr. Smith, from whose accurate description the preceding one is abridged. The kernels of both these species are eaten in their native countries; and from the pith of both a kind of fago is made, which is said to be very nutritious, but not equal to that which is produced by the tree fagia palm, metroxylon of Rottboell, and fagus of Gartner, La Marek, and Vincentat. Linnicius confounded the two plants. 3. C. inermis. Linn. Cochin. p. 63. "Leaves pinnate; common petioles without pistillae." Trunk five feet high, the thickness of the human thigh, quite smooth, brown, rugged. Leaves five feet long, alaming; leaflets linear-anacolate, fix inches long, smooth, dull green, flat, flat, fiddle. Male catkin drobile-shaped, four inches in diameter, terminal, solitary, erect, oval-oblong, brownish-yellow, inbricated, rather close; scales oblong-top-shaped, thick, fuggous; anthers more than a hundred in each scale, the size of ripe-speed, globular, delphic at the tip. Fruits of the female flowers various, linear, reflexed, less-flowered, nearly terminal, simple, dilated and jugled near the top. Fruit an inch and half long, egg-shaped, somewhat compressed, smooth and even, red. Found wild and cultivated for its beauty in Cochinchina and China, but no part of it is used for food. Is Tonquin a tolerable fago is said to be obtained from the pith.

CYCEON, from κεκεν, to mix; a name given by the Ancient Poets and Physicians to a mixture of meat and water, and of times of other ingredients. Thee constituted the two kinds of cecyon; the coarser being of the water and meat alone; the richer and more delicate composed of wine, honey, flour, water, and cheese. Homer, in the eleventh Iliad, talks of cecyon made with cheese and the meal of barley, mixed with wine, but without any mention either of honey or water; and Ovid, referring the draught of cecyon given by the old women of Athens to Ceres, mentions only flour and water. Dioscorides understood the word in both these senses: but extolled it most in the coarse and simple kind, he says, when prepared with water alone, it refrigerates and nourishes greatly.

CYCesium, in Ancient Geography, a town of Greece, in the Peloponnesus, placed by Strabo near the fountain Bifs.

CYCINNIS, a Grecian dance, so called from the name of its inventor, one of the Satyrs belonging to Bacchus. It consisted of a combination of grave and gay movements.

CYCLADES, from the Greek word κυκλάδες, a circle, in Ancient Geography, a cluster of islands in the Egean sea, forming a kind of circle round Delos, though this is not strictly the case, as most of them lie S. of Delos: called Minoa by Apollonius. The number and order of these islands, according to Strabo, are as follow: Helena, Ceos, Cythnos, Seriphos, Milos, Siphnos, Creos, Prepeithos, Oleron, Naxos, Paros, Syros, Myconos, Tinos, Andros, Chios, which see respectively.


Efl. Ch. Corolla wheel-shaped; tube very short, with a prominent orifice; border reflexed. Stamens within the tube. Berry covered with a capsule.


Propagation and Culture.—The plants of this genus admit of but little moreale by the roots; the belt method of propagating them is by seeds, which should be thin long after they are ripe, in boxes, or pots, and covered about half an inch deep, placing them where they may have one or two inches of the morning sun, till the beginning of September, when they may
may be removed to a warmer exposure. The first, second, and fourth species may be planted in the earth close to a south wall in a mixture of bog-earth and loam, and will stand common winters without covering, but in very severe frosts should be sheltered by mats or straw. If the feaun be mild the first species will flower as early as February, or much earlier by artificial heat. The third species is more tender, and requires to be treated rather as a greenhouse plant. None of the species should have much water after the leaves have died down.

**Cyclamen**, in Gardening, contains plants of the low, herbaceous, flowery, perennial tuberous-rooted kind; of which the species cultivated are: the common cyclamen (C. Europeum), the round-leaved cyclamen, (C. coum), the Persian cyclamen, (C. Perficum), and the fig-leaved cyclamen, (C. hederifolium).

**Method of Culture.**—All these plants may be increased by fowing the seeds in large wide pots, tubs, or boxes filled with good light mould mixed with a little sand, in the latter end of summer or the beginning of autumn, covering them to the depth of about half an inch, expelling them at first in situations that have only the morning sun, but afterwards removing them into more warm and sunny exposures; and as the winter approaches, placing them under the protection of frames and glass, or some other contrivance, fresh air being admitted when the weather is mild and fituble. In this way some plants of the hardy sorts will appear about the beginning of the following year, and of all the kinds in the spring. During the beginning of summer, when the weather is hot and dry, flight waterings should be given occasionally; but when their leaves begin to decline in the latter end of it, they should be removed to an eastern aspect, with only the morning sun; and as their roots are then in an inactive state, have little or no water. They should be kept free from weeds in the autumn, and have some fresh mould applied over the surfaces of the pots or tubs in which they grow, protecting them again in the winter as before, continuing the same management as in the preceding year, till the decline of the leaves in the latter part of the summer, when they should be carefully taken up, and the more hardy sorts planted out in the situations where they are to remain, as those of a warm, dry border; and the tender kinds removed into pots to have protection from frosts in winter.

As the Persian sort is the most impatient of cold and moisture, it should constantly be kept in pots filled with light sandy earth, or a compost of loam and lime-rubbish, and be placed in such situations in the frame or greenhouse, as to have as much free air as possible in mild weather in winter. Some of the sorts will generally begin to flower in the course of one or two years after being thus planted out; the first kind often about Christmas, which is succeeded by those of the Persian sort.

The plants in the borders should have the protection of mats, or other contrivances, in severe winters, as by such means they produce a greater abundance of flowers, and these more fair and beautiful.

The varieties of the different sorts are best preferred and continued by planting pieces of the divided roots, immediately after they have been separated in the summer season, in pots, tubs, or other places, as above: but in this mode they do not increase in an expeditious manner.

These plants are very ornamental though of small growth, in their variegated large foliage, as well as their elegant flowers, which in some of the sorts are fragrant, as those of the spring kinds.

The hardy sorts produce a fine effect in the fronts of borders, or clumps in pleasure-grounds, and those of the tender kinds among other potted plants in the greenhouse.

The most proper period for removing these plants for any purpose is about the beginning of June, when the leaves decline, but they should not be often removed, as the roots do not lose their fibres, as in some others of the tuberous and bulbous rooted kinds of flowers.

**Cyclamen Sinus**, in Ancient Geography, a gulf of Alba Minor, in the Thracian Bosphorus, N. of the gulf Caphsia.

**CYCLAS**, in Botany, Schreb. Mart. See CRUDDIA.

**CYCLAS**, in our Old Writers, a long garment, close upwards, and open, or large below. Matt. Paris, speaking of the citizens of London, tells us they were *cericis vestimenta ornatis*, cycladibus *auri testis circumdata* Anno 1226.

**CYCLE**, (κύκλος, a circle of time) a periodical portion of time, constantly renewed after the expiration of the proper interval, in which certain phenomena, or events, complete their courses.

We shall here recite some of the principal cycles, with their defects and improvements. The first we shall mention is the

**Cycle, Calippic.** See Calippic Period; and Metonic Cycle.

**Cycle, Canicular.** See Canicular Year.

**Cycle, Chinefe.** A period of 60 years, or of 720 revolutions of the moon, which, with the settled intercalation of 22 lunations, were at first supposed to bring a perfect coincidence of the relative positions of the sun and moon;—however, even according to this period, every new year was made constantly to recede, in a very small degree, which the Chinefe afterwards, from time to time, corrected. This cycle answered a double purpose; one as an era for chronological reckoning, and the other as a regulating period for a lunular year. Each year of the cycle is distinguished by the union of two characters, taken from such an arrangement of an unequal number of words placed in opposite columns, that the same two characters cannot be found again together for 60 years. The first column contains a series of ten words; as, kia, y, ping, ting, wu, li, kong, sin, yun; the other of twelve words, see, tze, teben, wu, ma, tchen, sin, wu, yun, chin, yun, li; which last are, in reality, the same that denote the twelve hours or divisions of the day; each being double the European hour. The first word or character of the first series or column of ten words, joined to the first word of the second series or column of twelve, marks the first year of the cycle; and so on until the first series is exhausted; when the eleventh word of the second series combined with the first of the first series, marks the eleventh year of the cycle; and the twelfth or last of the second series joined with the second of the first series, marks the twelfth year of the cycle. The third of the first series becomes united in regular progression with the first of the second series to mark the thirteenth year; and proceeding in this order, the first character in the first and second series cannot come again together for sixty years, or until the first year of the second cycle. Guibray says, that the year 1723 was reckoned the 40th year, or the year kia-mao, of the 7th hexagenary cycle, so that it is easy to ascend backwards to the commencement of the Chinefe era. For 73 cycles of 60 years and the odd 39 years of the 74th cycle, amount to 4,419 years, which will bring us to the year 2695 before the Christian era, or 347 years before the deluge, according to the chronology of the Hebrew text. But if, with Sir George Staunton, in his "Embassy to China," (vol. ii. p. 555.) we reckon the year
CYCLE.

1757; the 54th year of the 68th Chinese cycle, its commencement must have been 2277 B. C., or about 47 years after the deluge. The invention of this Chinese cycle is commonly ascribed to Hoang-ti, who lived above 300 years before Yao, the commencement of whose reign is dated by Du Hable, in the year 2357 B. C.

**Cycle of Cleothratus.** a period of eight years, or 2922 days, distributed into 99 lunations, viz. 69 of 29 and 30 days alternately, and three complete intercalary months. (Herod. i. c. 32. Gemin. Elem. Afr. c. 6.) This cycle was contrived by Cleothratus, an astronomer of Tenedos, who flourished after Thales about the year 532 B. C. He observed, that one revolution of the sun being completed in 365 days 6 hours, was 11\(\frac{3}{4}\) days greater than 12 lunations of 29 days. These 11\(\frac{3}{4}\) days multiplied by 9, amount to 90 days, which are equal to three months of 30 days each.

Hence he formed his cycle. This cycle, by which the Olympic games were regulated, would have been very exact, if a lunar year had consisted of 354\(\frac{4}{7}\) days; but in reality, it consists of 354\(\frac{4}{7}\) days, 6 hours, 52 minutes, 7.382 seconds. The difference, viz. 4\(\frac{4}{7}\) days, 16 hours, 2 minutes, 10.98 seconds, in the space of eight years, would amount to 30\(\frac{3}{7}\) days, 12 hours, 3 minutes, 2 seconds; so that 99 lunations contain 2924\(\frac{3}{4}\) days, 11\(\frac{1}{3}\) hours, 40 minutes, 41.9 seconds. The moon, which should have been renewed at the conclusion of this cycle, was observed to be 1\(\frac{3}{4}\) days, 10 hours, 41 minutes, 31.972 minutes excepted from the time of conjunction.

This error must have exceeded three days in 16 years, and 30 days in 160 years. The correction of it was attempted by succeeding astronomers. The addition of three days, which was made at the conclusion of two periods, corresponded nearly to the course of the moon, but not to that of the sun. Hence arose a confusion and perplexity, which excited the ridicule of Aristophanes, in his comedy of the "Clouds." The partiality which many of the Greeks retained in favour of the cycle of Cleothratus induced Eudoxus to attempt the correction of it. He observed, that eight solar years of 365 days contained 2922 days, and that 90 lunations contained 2923\(\frac{3}{4}\) days. In the course of every period, therefore, the moon varied from the sun a day and a half, which amounted to a month of 30 days, in 20 periods, or in 160 years. The subtrahend of this month from every 160 years constitutes the cycle attributed by Scaliger to Eudoxus. (De Mendi. Temp. l. ii. p. 69.)

**Cycle, Metonic, or lunar cycle of Meton.** is a period of 6940 days, in which are very nearly completed 19 tropical revolutions of the sun, or 19 solar years, and 235 lunations, or revolutions of the moon, with regard to the sun. After the completion of this cycle, the conjunctions of the sun and moon take place in the same degrees of the ecliptic, and consequently the new moons fall on the same days of the year as they did 19 years before.

Livy seems to ascribe the invention of this cycle to Numa Pompilius, and Clementus to Euthenon and Philippus; but the honour of it has been generally attributed to Meton, an Athenian astronomer, about 432 years before our era, for the purpose of regulating the festivals of the Greeks, which, on account of the imperfection of the calendar of that people, had gone into great confusion. The Greeks denominated it Metonicus, metonicus. It was published at the general meeting of the Greeks, assembled for the celebration of the Olympic games; and it was received with so much applause, that it was decreed to be the invention of the first department. The scheme of the festivals, arranged to the new cycle, was publicly proposed, inscribed on a marble pillar in letters of gold; and hence the number which expresses the order of the current year in this cycle is usually called the golden number. This cycle was adopted on July 16th, B. C. 2373, and the new moon which happened P. M. 7\(\frac{4}{7}\) days, was the precise era of its commencement. The first day was reckoned from fun set.

The year of the Greeks consisted of 12 months of 29 and 30 days alternately; making in all a period of 354 days, which comprises very nearly 12 lunations, or full moons. This year corresponds to the mean conjunctions of the sun and moon within something less than nine hours. The great difficulty was to connect this lunar year with the revolution of the sun, so as to make the several months fall nearly in the same seasons. The Olympic games were celebrated every fourth year, during the full moon next after the summer solstice; and the year of the Greeks was so regulated as to make this the full moon of the first month. This purpose was effected by intercalations; but there were managed to injudiciously, that, in the time of Meton, the calendar and the celebration of the first festivals had fallen into great confusion. In the "Clouds" of Aristophanes, Diana, the goddess of the moon, is introduced greatly displeased that her course was no longer the standard by which the disposition of the festivals and the sacrifices to the gods was regulated; she complains bitterly that the deities were often disappointed of the recompenses, which, on the return of the due times, they expected to receive from the devotion of their worshippers. This clearly shows the height to which the evil had reached, and proves that the necessity of mending the calendar was generally perceived; a circumstance which, while it would stimulate the exertions of ingenious men to find a remedy, would, at the same time, secure a favourable reception to a proper plan of reform.
CYCLE.

ture of the methods employed in the astronomy of that people, favours this opinion.

The civil year, according to the calendars now in use, is entirely regulated by the motion of the sun; but certain festivals of the Christian church, such as that of Easter, are still dependent upon the full moons that happen at determined times of the year. The celebration of Easter, as laid down by the council of Nice in 325, is fixed for the first Sunday after the next full moon following the 21st of March; and thus our calendars, as well as that of ancient Greece, require a method of reconciling the motions of the sun and moon.

At the time this rule was established, the vernal equinox really happened on the 21st of March, and the framers of it seem to have imagined that this would always continue to be the case. The intention certainly was to make the Paschal moon depend on the vernal equinox; and if the Nicene decree mentions the day on which the equinox then happened, and not the equinox itself, without making any provision for the separation of these two events, this can only be accounted for from its not being adhered to that such a separation might possibly take place. The fathers of the council of Nice made no change in the civil year, which continued to be regulated by the Julian calendar as before. All that was then thought to be necessary for introducing into the church an uniform practice in regard to the times for celebrating the feast was, to lay down a general rule for determining the Paschal full moon, and of course Easter Sunday. For this purpose the ancient cycle of Meton was adopted. If it be supposed that 235 lunations are precisely equal to 10 Julian years, it is plain that the Paschal full moons would happen on the same days of the month in the corresponding years of every cycle. For instance, if the Paschal full moon should fall on the 17th day of April of the fourth year of the current cycle, the same event would take place on the same day of the same month of the fourth year of all the following cycles. According to this supposition, it was only necessary to determine the Easter Sundays for one complete cycle, in order to have a perpetual table for all succeeding ages. This was the simple scheme adopted by the church after the council of Nice; and this practice continued to be universally followed till the reformation of the calendar in 1552, and, by some of the Protestant churches, for a long time after.

But in process of time two things happened, which had not been provided for by the council of Nice, and which introduced confusion into the calendar, and a departure from the rule laid down for the celebration of Easter. The first of these was the separation of the vernal equinox from the 21st of March. In the 16th century the first full moon after the 21st of March was frequently not the first full moon after the vernal equinox, which it ought to be, according to the intention and spirit of the Nicene decree. In fact the vernal equinox, which in 325 fell on the 21st of March, in the 16th century actually happened on the 10th of the same month. This anticipation was owing to the excess of the Julian year, of 365 1/4 days, above the actual time of a tropical revolution of the sun, which is only 365 1/4 days. In an interval of 1300 years the sum had anticipated the Julian calendar 10 complete days.

The second thing that happened was owing to the inaccuracy of the supposition on which the scheme for determining the Paschal full moons was founded; namely, that 235 lunations are exactly equal to 10 Julian years. The error of this supposition was precisely the same as that of the ancient period of Cællippus, introduced to correct the cycle of Meton; and it amounted to something less than a day in 304 years. In 1300 years, that elapsed between the council of Nice and the end of the 16th century, the full moons calculated by the rules of the church were later than the true full moons by nearly four days: and hence arose a distinction between the ecclesiastical full moons and the true ones.

The defects of the calendar, both in regard to the fea- sons and to the full moons, had been frequently the subject of discussion before the 16th century, and many plans of reform had been proposed at different times. At last pope Gregory XIII., in 1582, accomplished the great work of reforming the calendar. As far as regarded the civil year the undertaking was neither very difficult nor very complicated. In order to bring the 21st of March to the equinox, as it was at the time of the council of Nice, 10 days were cut off, by calling the 7th day of October 1582, the 17th of that month; and, in order to fix the equinox for the 21st of March in all time coming, three days were directed to be left out in every period of 1460 Julian years, by making three consecutive centural years common years, and the fourth a bissextile year; whereas, according to the old calendar, every centural year was a bissextile year. This is equivalent to the supposition that 400 tropical revolutions of the sun are performed in 146,097 days; which, although it is not perfectly exact, is very near the truth. The error in excess and it amounts to a day in 35 centuries; and, on this account, a day extraordinary must be left out in that period of years. The first correction for this error will fall in the year 5620, which must be made a common year, although, in the general tenor of the calendar, it should be a bissextile year.

A more difficult part of the reformation of the calendar, was to connect the motions of the moon with the solar year, so as to lay down a rule sufficiently simple for determining the Paschal full moons. The scheme to which the preference was given is still founded on the Metonic cycle of 19 years, although a new set of numbers, called epacts, was introduced. By the epact of any year is understood the age of the moon on the first day of January of that year; or, it is the number of days elapsed since the last new moon. The epacts, it is evident, will be regulated by the excess of the solar year above 12 lunations, which are completed in it. Supposing a full moon to fall on the first day of January, the epact for that year would be 0; but next year it would be 1, which is the number of days that the solar year exceeds 12 lunations; the third year it would be 22; the fourth year it would be 5, namely, the excess of 33 above 30, the number of days that sufficed for a lunation. In this manner the epacts for a complete cycle of 19 years are continued, by constantly adding 11 and dropping 30, when the sum exceeds that number; after which the series of numbers again recommences with a new cycle.

If 235 lunations had corresponded exactly to 19 Julian years, the series of epacts would have been perpetual, or constantly the same for every cycle: and the new calendar would have been in substance the same as the old method by the golden numbers. But this regularity of the epacts is disturbed by two causes; by the omission of the intercalary days in the secular years; and by the error of the cycle of 19 years, which amounts to a day nearly in three centuries. On the former account a day must be subducted from the series of epacts at the commencement of every century, whose first year is a common year; and on the latter account a day must be added to the same numbers after every interval of 300 years. In the language of the calendar,
the first correction is called the polar equation, and the latter the lunar equation. It thus happens that every century, for the most part, requires a new set of epacts; at the same time it is not difficult to infer from what has just been said that the same set will sometimes continue in use for two, and even for three centuries together. If we consider further that every set of epacts is derived from the epact of the first year of the cycle, and that this is necessarily a number less than 30, it will plainly appear that all the possible sets are limited to 30. In the scheme of the Gregorian calendar, the 30 sets of epacts are arranged in a table, and they are distinguished by as many letters of the alphabet, which serve as indexes: in another table the several secular years are contained, each having the letter annexed to it, which is the index of the set of epacts to be used for the following 100 years.

According to the Gregorian calendar, the series of epacts for 1839, which is to continue in use for the 19th century, is

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, XXVIII, IX, XX, 1, XII, XXIII, IV, XV, XXVI, XVII, XVI, XV, VIII, VII, X.

The figures denote the golden numbers, or the rank in the cycle of 19 years, and the Roman characters the epacts: the asterisk denotes either 0 or 30. In the year 1900, which is a common year, the epacts must be all carried back a day; thus,

1, 2, 3, 4, 5, 6, 7, 8, XXIX, X, XXI, II, XIII, XXIV, V, XVI, XVII, VIII, XIX, VI, XI, XII, XXII, III, XIV, XV, XVII, XVI, XV, VIII.

And this set of epacts will remain in use for the next 300 years: for the year 2000 being a bissextile year, there is no polar equation; and the year 2100 being a common year, and at an interval of 300 years from 1800, the polar and lunar equations both take place, and, being contrary to one another, they produce no change in the epacts.

It is to be remarked that the new moons do not anticipate the cycle of 19 years quite so much as a day in 300 years: the anticipation is only 8 days in 2500 years: and hence, after having applied the lunar equation of the epacts seven times successively, at intervals of 300 years each time, it must be applied the eighth time at an interval of 400 years.

At the time of the council of Nice, when the lunar cycle of 19 years was adopted for commencing the church festivals, it would have been most convenient to have made the series of cycles to commence with the era of Christ. Had this been done, the golden number of any proposed year, or its rank in the current cycle, would have been the remainder of the division when that year was divided by 19. But this consideration was neglected in preparing the table of the Paschal full moons, which was accommodated to the date of the heavens at its formation; and, reckoning back, it was found that the first year of our era corresponded not to the first, but to the second year of the cycle of 19 years. Hence the golden number for any proposed year will be found by this rule: "Add 1 to the year and divide by 19; the remainder of the division is the golden number sought; if there be no remainder, the golden number is 19." The only use of the golden number, in the new or reformed calendar, is to find the epact.

If it be proposed to find the golden number for the year 1808; then 1809 being divided by 19, the remainder of the division comes out to be 4, the golden number for that year. In the set of epacts in use for the 19th century, it will be found that 111 corresponds to the golden number 4; this then is the epact for 1808, or the age of the moon on the first of January 1808, according to the calendar: whence all the full moons for that year may readily be found.

The calendar is entirely founded on the mean motions of the sun and moon, and the new moons computed by it would have coincided with the mean conjunctions of the sun and moon, if its epoch had coincided with the astronomical epoch. This, however, is not the case: the astronomical epoch is earlier than the epoch of the calendar, and the mean conjunctions of the sun and moon precede the new moons of the calendar.

As the lunar cycle of 19 years sometimes includes five leap-years, and sometimes four, it is impossible to have a correct table of all the numbers, unless it be extended to four times 19, or 76 years, in which there are 19 leap-years without a remainder. In this case, however, it must be adapted to the old style, because, in every common year not divisible by 4, the regular course of leap-years, is interrupted in the new style, as was the case in the year 1800. Mr. Ferguson, in his "Astronomy," (p. 264-5) has given a table, computed upon the regular old style plan, of the mean times of all the new moons to the nearest hour for 76 years, from the year of Christ, 1724, to the year 1803, inclusive: and he has also shown how to make this table perpetual. The table is here subjoined.
### CYCLE

A Table, shewing the Times of all the Mean Changes of the Moon, to the nearest Hour, through four Lunar Periods, or 75 Years. M signifies Morning, A, Afternoon.

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<td>6</td>
<td>4M</td>
<td>5</td>
<td>5M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>72 1825</td>
<td>11</td>
<td>2M</td>
<td>9</td>
<td>3A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>73 1826</td>
<td>38</td>
<td>11A</td>
<td>30</td>
<td>1OA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>74 1827</td>
<td>16</td>
<td>7A</td>
<td>15</td>
<td>8M</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75 1828</td>
<td>6</td>
<td>4M</td>
<td>5</td>
<td>5M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>76 1829</td>
<td>25</td>
<td>2M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>77 1830</td>
<td>14</td>
<td>11M</td>
<td>13</td>
<td>0A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The year 1800 begins a new Cycle.
CYCLE.

This table may be made perpetual, by deducting six hours from the time of new moon in any given year and month from 1724 to 1828, in order to have the time of new moon in any year and month 76 years afterward; or, deducting 12 hours for 152 years, 15 hours for 288 years, and 24 hours for 352 years; because, in that time the changes of the moon anticipate almost a complete natural day. And if the like number of hours be added for many years past, we shall have the mean time of any new moon already elapsed. This table may be easily adapted to the new style, for any time to come. Thus, because the year 1724 in this table is the full year of the cycle for which it is made; if, from any year of Christ after 1828, you subtract 1724 and divide the excess by 76, the quotient will shew how many entire cycles of 76 years are elapsed since the beginning of the cycle here provided for; and the remainder will shew the year of the current cycle answering to the given year of Christ. Hence, if the remainder be 0, you must instead of it put 76, and lessen the quotient by unity. Then, look in the left-hand column of the table for the number in your remainder, and against it you will find the times of all the mean new moons in that year of the present cycle. And whereas, in 76 Julian years, the moon anticipate 5 hours 52 minutes, if these hours and minutes be multiplied by the quotient above found, the product subtracted from the time in the table will leave the corrected times of the new moons to the old style; which may be reduced to the new style, thus:

Divide the number of entire hundreds in the given year of Christ by 4, multiply this quotient by 3, to the product add the remainder, and from their sum subtract two; this last remainder denotes the number of days to be added to the times above corrected, in order to reduce them to the new style. The reason is this; because every 400 years of the new style gains 3 days upon the old style, one of which it gains in each of the centenary years succeeding that which is exactly divisible by 4 without a remainder: but then, when you have found the days to gained, 2 must be subtracted from this number, on account of the refinements made in the calendar by the council of Nice, and since by pope Gregory. It must also be observed, that the additional days found, as above directed, do not take place in the centenary years, which are not multiples of 4 till February 29th, Old Style; for on that begins the difference between the styles; till which day, therefore, those that were added in the preceding years must be used. F. C.

Regulated the mean time of new moon in April, A. D. 1828, N. S.

From 1828 take 1724, and the remainder 85, divided by 76, gives a quotient 1 and a remainder 9; against which, in the table, is April 15th 8th A.; and subtracting from it, 5° 52' x 1, the above quotient, the remainder will be 13° 2° 8', the mean time, according to the old style; then the quotient of the entire hundreds in 1828 divided by 4 being 4, and the remainder 2, multiply 4 by 3; add the product 12 to the remainder 2, the sum will be 14, from which subtract 2, and the remainder 12, added to the above time, old style, gives 17° 2° 8'. Hence, it appears, that the mean time of new moon in April, 1828, New Style, is the 25th day at 8 minutes past 2 in the afternoon.

If 71 days be added to the time of any new moon in this table, it will give the time, according to the new style, till the year 1800. And if 14 days, 18 hours, 22 minutes, be added to the mean time of new moon, in either style, it will give the mean time of next full moon according to that style.

Table I. Shewing the Golden Number (which is the same both in the Old and New Style) from the Christian Era to A. D. 4000.

<table>
<thead>
<tr>
<th>Years less than an hundred.</th>
<th>Hundreds of Years.</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18</td>
</tr>
<tr>
<td>1000</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19</td>
</tr>
<tr>
<td>2000</td>
<td>2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20</td>
</tr>
<tr>
<td>3000</td>
<td>3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21</td>
</tr>
<tr>
<td>4000</td>
<td>4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22</td>
</tr>
<tr>
<td>5000</td>
<td>5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23</td>
</tr>
<tr>
<td>6000</td>
<td>6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24</td>
</tr>
<tr>
<td>7000</td>
<td>7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25</td>
</tr>
<tr>
<td>8000</td>
<td>8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26</td>
</tr>
<tr>
<td>9000</td>
<td>9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27</td>
</tr>
<tr>
<td>10000</td>
<td>10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28</td>
</tr>
<tr>
<td>11000</td>
<td>11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29</td>
</tr>
<tr>
<td>12000</td>
<td>12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30</td>
</tr>
<tr>
<td>13000</td>
<td>13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31</td>
</tr>
<tr>
<td>14000</td>
<td>14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32</td>
</tr>
<tr>
<td>15000</td>
<td>15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33</td>
</tr>
<tr>
<td>16000</td>
<td>16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34</td>
</tr>
<tr>
<td>17000</td>
<td>17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35</td>
</tr>
<tr>
<td>18000</td>
<td>18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36</td>
</tr>
</tbody>
</table>

Table II.
**CYCLE.**

**Table II. Shewing the number of Direction, for finding Easter Sunday by the Golden Number and Dominical Letter.**

| G. N. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| A     | 6 | 16| 26| 36| 46| 56| 66| 76| 86| 96| 106| 116| 126| 136| 146| 156| 166| 176| 186|
| B     | 7 | 17| 27| 37| 47| 57| 67| 77| 87| 97| 107| 117| 127| 137| 147| 157| 167| 177| 187|
| C     | 8 | 18| 28| 38| 48| 58| 68| 78| 88| 98| 108| 118| 128| 138| 148| 158| 168| 178| 188|
| D     | 9 | 19| 29| 39| 49| 59| 69| 79| 89| 99| 109| 119| 129| 139| 149| 159| 169| 179| 189|
| E     | 10| 20| 30| 40| 50| 60| 70| 80| 90| 100| 110| 120| 130| 140| 150| 160| 170| 180| 190|
| F     | 11| 21| 31| 41| 51| 61| 71| 81| 91| 101| 111| 121| 131| 141| 151| 161| 171| 181| 191|
| G     | 12| 22| 32| 42| 52| 62| 72| 82| 92| 102| 112| 122| 132| 142| 152| 162| 172| 182| 192|

*This Table is adapted to the New Style.*

*Use of Table I.* Find the even hundreds of any given year at the left hand, and take the odd years in the columns at the head of the table; and where the horizontal and vertical columns meet, you will have the golden number (which is the same both in old and new style) for the given year. *E. G.* Let the year be 1865; and having found 1800 at the left hand of the table, look for 8 at the top; under this number, and even with 1800, we find 4, which is the golden number for that year. See *Golden Number,* and preceding part of this article.

To find the *Epact,* see *Exact,* and the preceding part of this article.

*Cycle of the Moon,* or *Lunar Cycle,* is a period of 19 years; equivalent to 19 lunar years, and 7 intercalary months, which was thought to contain exactly 6940 days, or 235 full moons and other aspects, are supposed to return to the same name of the Julian year.

This is also called the *Metonic period.* (See the preceding article.)

*Cycle of the Sun,* or *Solar Cycle,* is a period of 28 years, after which the days of the month return to the same days of the week.

In order to connect the days of the week with the days of the year, the first seven letters of the alphabet are chosen to mark the several days of the week; and they are disposed in such a manner for every letter that the first day of January will be for the 1st day of January: the letter B for the second day; the letter C for the third; and so on; the seven letters being constantly repeated in their order through all the days of the year.

It is plain, from this disposition, that the same letter will answer to Sunday, or any other day of the week, throughout the whole year. The letter which stands for Sunday, in any year, is called the dominical letter for that year.

This cycle has no reference to the motion of the sun, as its name would seem to imply. It has derived its appellation from the Latin name of Sunday, *Dies Solis,* the chief use of this cycle being to find the dominical letters, or the days of the year that answer to Sunday.

A common year of 365 days contains 52 weeks and 1 day; hence it follows, that the first and last days of a common year fall on the same day of the week, and answer to the same letter. Because the first day of every year is represented by the letter A, it is plain that if the first day of a common year be Monday, the seventh day will be Sunday, and the dominical letter for that year will be G; the following year will begin with Tuesday, and the fifth day of the year will be Sunday, to which the letter F corresponds; if this second year be a common one, the third year will begin with Wednesday, and the fifth day of the year will be Sunday, and the dominical letter will now be E. Thus, if all the years were common ones, the several letters, taken in a retrograde order, would successively stand for Sunday, and the cycle of the dominical letters would be completed in seven years, after which the letters would return again in the same order. But this simple arrangement is disturbed by the bixtile, or leap years, each of which contains 52 weeks and two days. In order to correct the effect of the intercalation, and to cause the same letters to fall on the same days of the month, after the 29th of February, that they would have done if no intercalation had taken place, the whole series of letters must be shifted forward a day after the 29th of February; and thus every leap year has two dominical letters; the one to be used before the intercalary day, and the other, which always stands before the first in the order of the letters, to be used for the rest of the year. It now appears that there are five different dominical letters, all standing next one another in a retrograde order, required for every period of four years; and as it is easy to prove that no more than seven such combinations of five letters can possibly be formed, it follows that, in 28 years, all these combinations will be exhausted, the dominical letters will be again renewed in the same order as before, and the days of the month will return to the same days of the week.

If the contrivers of this cycle had consulted simplicity and convenience, they would have made the series of cycles to commence with the Christian era. This consideration has been neglected, and the first year of our era is found to correspond to the 1st of the solar cycle. Hence is derived this rule: for finding the rank of any proposed year in the current cycle of 28 years. *Add 9 to the proposed year, divide the sum by 28, and the remainder of the division is the year of the solar cycle; if there be no remainder, the proposed year is the 28th year of the cycle.* It will readily be observed that the first year of every cycle is a leap year, unless in the case of a centurial year, when the intercalary day is omitted.

The following table shews the disposition of the letters in the solar cycle for 100 years, beginning with 1800.

<table>
<thead>
<tr>
<th>Year</th>
<th>Letter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800</td>
<td>D</td>
</tr>
<tr>
<td>1801</td>
<td>E</td>
</tr>
<tr>
<td>1802</td>
<td>F</td>
</tr>
<tr>
<td>1803</td>
<td>G</td>
</tr>
<tr>
<td>1804</td>
<td>A</td>
</tr>
<tr>
<td>1805</td>
<td>B</td>
</tr>
<tr>
<td>1806</td>
<td>C</td>
</tr>
<tr>
<td>1807</td>
<td>D</td>
</tr>
<tr>
<td>1808</td>
<td>E</td>
</tr>
<tr>
<td>1809</td>
<td>F</td>
</tr>
<tr>
<td>1810</td>
<td>G</td>
</tr>
</tbody>
</table>

*The*
The year of the cycle for 1808, found by the preceding rule, is 25; to which the dominical letters C B correspond. Hence, this year, which is a leap year, began on Friday, and will end on Saturday.

There is a peculiarity in the use of this table for the year 1800, which may be proper to remark: the year of the cycle for 1800 is 17, to which the letters F and E correspond; but 1800 being a common year, the letter E is the dominical letter throughout the whole year.

In the year 1900, the order of the letters will be interrupted by the omission of the intercalary day, and a new table must be constructed. For this purpose, it is only necessary to move the letters in the preceding table one place forward; so that the letters for the four first years of the cycle will be F, D, C, B; and, because the year 2000 is a biform year, the order of the letters will not be again interrupted till 2100, and so long will the new table continue in force.

The dominical letter may be easily found for any year either before or after the Christian era, by the following tables:

**Table III. Shewing the Dominical Letters, Old Style, for 4200 Years before the Christian Era.**

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1985-5684</td>
<td>D C E B A F G F E D</td>
</tr>
<tr>
<td>1985-5684</td>
<td>D C E B A F G F E D</td>
</tr>
<tr>
<td>1985-5684</td>
<td>D C E B A F G F E D</td>
</tr>
<tr>
<td>1985-5684</td>
<td>D C E B A F G F E D</td>
</tr>
<tr>
<td>1985-5684</td>
<td>D C E B A F G F E D</td>
</tr>
</tbody>
</table>

**Table IV. Shewing the Dominical Letters, Old Style, for 4200 Years after the Christian Era.**

<table>
<thead>
<tr>
<th>After Christ.</th>
<th>Hundreds of Years.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-000</td>
<td>D C E B A F G F E D</td>
</tr>
<tr>
<td>2000-000</td>
<td>D C E B A F G F E D</td>
</tr>
<tr>
<td>2000-000</td>
<td>D C E B A F G F E D</td>
</tr>
<tr>
<td>2000-000</td>
<td>D C E B A F G F E D</td>
</tr>
<tr>
<td>2000-000</td>
<td>D C E B A F G F E D</td>
</tr>
</tbody>
</table>

*Table continued...*
has always two dominical letters, the change taking place at the end of February. If the dominical letters were wanted for the same year, old style, they will be found by Table IV. to be E D. But to find the dominical letter for any year before Christ, subtract 1 from that year, and proceed to find it, as before, by Table III. E. G. Let it be required to find the dominical letter for the 58th year before the first year of Christ, look for 500 at the head of Table III. and for 84 at the left hand; and in the meeting of the columns you find F E the dominical letter, indicating that year to have been leap-year.

The following table serves for finding the day of the month answering to any day of the week; or the day of the week answering to any day of the month, for any year past or to come.

<table>
<thead>
<tr>
<th>Week Day</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 31</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>October 31</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td>November 30</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>April 30</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>July 31</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
</tr>
<tr>
<td>August 31</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>September 30</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>December 31</td>
<td>31</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>March 31</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>January 1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>February 1</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>March 1</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>April 1</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>May 1</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>June 30</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

**Use of the Tables.** In Table III. or IV. for Old Style or Table V. for New Style, look for the hundreds of years at the head of the table, and for the odd years, necessary for completing the given year, at the left hand; and where the columns meet, you have the dominical letter defined. Suppose it were required to find the dominical letter for the year of our Lord, 1858, New Style, look for 1800 at the head of Table V. and for 8 at the left hand of the same table; and in the angle formed by the lines of the two columns, we find C B, which are the dominical letters for that year, and show that it is leap-year; because leap-year

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**Use of the Table.** Having found the dominical letter for the given year, enter Table V. with the dominical letter at the head; and under it, all the days in that column are Sundays, in the divisions of the month; those in the next column to the right hand are Mondays; those in the next are Tuesdays, and so on to the last column under G, from which go back to the column under A, and proceed as before. Thus, in the year 1858, the dominical letters in 1858.
new Style are C; then all the days under C are Sundays, those under D are Mondays, &c. to that year as far as Feb. 28; and those under E are Sundays for the rest of the year, and those under C are Mondays, &c. If it be required to find the day of the week answering to any day of the month, it may be easily found from the same table by the letter that stands at the top of the column in which the given day of the months is found. Thus, the letter that stands over the 28th of May in A, and in the year 585, B. C., the dominical letters were found to be F E, which, being a leap-year, and E taking place from the 24th of February to the end of that year, (see Bussentte), shews by the table that the 25th of May was Sunday; and, therefore, the 28th must have been Wednesday. Hence, as it is said that the famous eclipse of the sun, foretold by Thales, by which a peace was brought about between the Medes and Lydians, happened on the 28th of May, in the 538th year B. C., it fell on a Wednesday. See Dominical Letter.

Cycle of Indiction, or The Indiction, is a period of 15 years, continually renewed like the other cycles.

This cycle is merely chronological, and has no reference to astronomy. It was introduced at Rome under the emperors, and it began in the year 312 of our era. Authors are very much divided in regard to the purpose which this cycle was intended to serve, and even in regard to the time it was first introduced. The times for the payment of certain taxes, or tributes, seem to have been regulated by it.

We may suppute the feries of indictions to have commenced three years before our era, and then the rank of any proposed year in the current circle will be found by this rule: \[ \text{add } 3 \div \text{the given year}, \text{and divide } 15; \text{the remainder of the division is the year of the indiction; if there be no remainder, } 15 \text{ is the year of the indiction.} \]

Thus, if the year 1808 be proposed, it will be found that the year of the indiction is 11.

The Julian period is a space of 7980 years, obtained by multiplying together the numbers 28, 19, and 15, which are the years in the lunar and solar cycles, and the indiction. This period was first proposed by Joseph Scaliger in 1583, with the view of introducing into chronology a language at once uniform and free from uncertainty. The principle by which these advantages are obtained is simple and not difficult to prove; namely, that there is only one number, less than 7980, which, being separately divided by 28, 19, and 15, will leave three proposed remainders. Hence, it follows, that when the ranks of any proposed year in the three cycles are known, the place of that year, in the Julian period, will be hence determined. Thus, every year in this long period is marked by peculiar characters, that distinguish it from all other years. The chronology of events, prior to the Christian era, is often not a little perplexed; both because authors make use of the Julian years now employed, and because the epochs from which they reckon are, in many instances, arbitrary and hypothetical. On this account, there is much advantage derived from reducing the principal epochs made use of in ancient history to the corresponding years of the Julian period, by which means their relative places are clearly fixed, without danger of ambiguity.

The Julian period has given occasion to the proposing of an arithmetical question, for the purpose of finding the rank which any given year holds in it. To do this, it is necessary to determine a number, which, when separately divided by 28, 19, and 15, shall leave three given remainders: a problem which, in general, is indeterminate, but admits of only one answer, when the restrictions arising from the nature of the case are taken into view. This problem has been often resolved, and is attended with no difficulty: on this account, we shall be content with inferring a rule, without stopping to give the investigation of it. Let \( l \) denote the rank of the proposed year in the lunar cycle, \( S \) its rank in the solar cycle, and \( i \) its rank in that of the indictions; then, having found the value of the expression \( 4200 \times l + 4845 \times S + 6916 \times i \), let it be divided by 7980, and the remainder of the division will be the year of the Julian period required.

For the first year of our era, \( l = 1 \), \( S = 10 \), and \( i = 4 \); and hence that year is found to correspond to the 4714th of the Julian period.

This period commenced 710 years before the supposed year of the creation, or, as Usher dates it, 4004 years B. C. At no later period than this could all the cycles begin together, and it is not yet completed; and therefore it includes all other cycles, periods, and eras. At the close of the 4717th year of this period was the Dionysian or vulgar era of Christ's birth; and consequently the first year of his age, according to that account, coincided with the 4714th year of the said period. Therefore, if to the current year of Christ we add 4713, the sum will be the year of the Julian period. And to find the year of the Julian period, corresponding to any given year before the first year of Christ, full subtract the number of that given year from 4714, and the remainder will be the year of the Julian period.

Cycle of Easter, Great Paschal Cycle, called also the Victorian or Dionysian Period, is the product of the solar and lunar cycles, or of 28 and 19, comprehending 532 years. If the new moons did not anticipate upon this cycle, Easter day would be always the Sunday next after the full moon which follows the 21st of March. But on account of this anticipation, which was not duly regarded before the alteration of the style, the ecclesiastical Easter has been several times, within the last century, a week different from the true Easter: an inconvenience which is now remedied by making the table which was used for finding Easter for ever, in the Common Prayer Book, of no longer use than the lunar difference from the new style will allow. The earliest Easter possible is the 22d of March, and the latest the 29th of April. Within these limits are 33 days, and the number belonging to each of them is called the Number of Direction; because it serves to find the time of Easter for any given year. In order to find this number of direction, according to the new style, first find the dominical letter, and then the golden number for the given year; then enter Table II, with the dominical letter at the left hand, and the golden number at the top; and where the horizontal and vertical columns meet is the number of direction for that year: which number, added to the 21st day of March, shews on what day either of March or April Easter Sunday falls in that year. E. G. The dominical letters for the year 1808 are C B, and the golden number is 4, and the number of direction, corresponding to these, is 27; which, reckoned from the 21st of March, gives the 17th of April for Easter Sunday.

Cycles in Harmonics, are certain determinate periods or series of pulsus or vibrations, excited in the air by the confluence of two musical sounds. Dr. Smith (Harmonics, p. 56.) distinguishes these, 1st, into simple cycles, when the least terms of the ratio expressing a small interval differ by 1; 2nd, complex cycles, when the least terms of such a confluence differ by more than unity; 3rd, short cycles, formed by the pulse of perfect confluences, in which whole ratios are expressed in small numbers; and, 4th, long cycles, of the pulses of imperfect unisons, or other confluences, which are not expressible but by high or small numbers.
In his seventh proposition, Dr. Smith demonstrates, "that in going from either end to the middle of any simple cycle, or period of the pulses of imperfect unisons, the alternate longer intervals between the successive pulses increase uniformly, and are proportional to their distances from that end; and at any distances from it less than half the simple cycle or period, are less than half the lesser of the two vibrations of the imperfect unison" from whence he deduces as corollaries, 1. "That any simple cycle or period of the pulses of imperfect unisons contains one more of the quicker than of the flower vibrations." 2. "The lesser intervals that lie nearest to the periodical points, and the points of coincidence, are less than any of the rest." 3. "Some of the alternate lesser intervals of the pulses of imperfect unisons are the differences of equal numbers of their vibrations, counted from the nearest coincident pulses; and others are the differences of equal numbers of the same part or parts of their single vibrations, counted from the nearest periodical point." 4. "If the vibrations of two couples of imperfect unisons, or of any two conformance, be proportional, the periods and cycles of their pulses, whether simple or complex, will be in the ratio of the homologous vibrations." 5. "The length of the period of the leaf imperfects, in any conformance of imperfect unisons, is the same as that of the period of its pulses." At page 525, the following is deduced as one of the corollaries to his eighth proposition: "The imperfect short cycle of any imperfect conformance contains equal numbers of the flower and quicker vibrations of the imperfect unisons, from whence it is derived."

If \( R \) and \( r \) be the leaf integers in the ratio of the interval between any two founds, and \( V \) and \( v \) represent the times of their single vibrations, respectively; then will the length of the cycle of times between the successive coincidences of the pulses of \( V \) and \( v \) be \( Rv \) or \( Rv \); because their multiples of \( V \) and \( v \) are the leaf of any which can be equal; \( R \) and \( r \) being prime to each other.

Also, if \( S \) and \( s \) be the leaf integers of another conformance, whose vibrations are \( V \) and \( x \); then the length of its cycle is \( xS \) or \( xSx \).

Hence the length of the cycle of \( V \) and \( v \), is to that of \( V \) and \( x \), as \( r \) to \( s \); that is, conformance which has a common found for vibration, \( V \), have the lengths of their cycles proportional to the numerators of the fractions \( \frac{r}{S} = \frac{v}{x} \), or \( V = x \), expressing the times of the single vibrations of the other founds. Harm. p. 22.

Supposing the vibrations, \( V \) and \( v \), of imperfect unisons to be incomensurable, or \( V : v :: \sqrt{p} : \sqrt{q} \); and \( x \) to be an indeterminate vibration, and \( V :: m : n \). Then if the ratios of the indeterminate numbers, \( m, n, s, \) be supposed to approach gradually to the given ratio of \( \sqrt{p} : \sqrt{q} \); though the length, \( xV \) or \( xS \), of the indeterminate cycle of the pulses of \( V \) and \( v \) increase without limits, nevertheless the length \( \frac{m}{m-n} \) or \( \frac{x}{x-n} \), of the indeterminate period of their pulses tends gradually to a determinate limit, \( \frac{\sqrt{p}}{\sqrt{q}} \) or \( \frac{\sqrt{p}}{\sqrt{q}} \). And this is the period of the pulses of the incomensurable vibrations, \( V \) and \( v \), which excites the determinate fission of this imperfect union, be the complex cycle of their pulses ever so long, infinite, or impossible. The doctor adds, at page 102, "I lay, determinate fission; for though the alternate lesser intervals of the pulses in the several successive periods of \( V \) and \( v \), even when commensurate, are not precisely equal, yet it is highly probable that the ear could not distinguish a repetition of any one period from the succession of them all, and seems agreeable to experience, in observing the identity tone of imperfect unisons held out upon an organ."

**CYCLIDium**, in *Zoology*, a genus of vermes, invisible to the naked eye, of a simple form, pellicul, flat, and orbicular or oval. They are found chieflly in vegetable infusions.

### Species

**Bulla.** Orbicular and transparent. Müll. *Cyclus corpore orbiculi sub-suffo*, Hill. Found in infusions of hay. Its colour is white and pellicul, with the margin rather dark; and its motion slow and circular.

**Miliun.** Elliptical and crystalline. Müll. Observed in vegetable infusions; its texture appears membraneous, and is marked with a line through the whole length.

**Pediculus.** Oval and convex, beneath flat. Müll. Gerova, &c.

Discovered by Trembley on the arms of the hydra suffa; the colour is white and gelatinous; with both extrmities depressed and truncated, or sometimes one of them left.

**Nucelus.** Oval; posterior part acuminate. Müll. Reminisces a grape-feast; the intellines are visible, and the fore and hind part at each side are dark. Found in vegetable infusions.

**Rosatum.** Oval; the anterior part ending in a point. Müll. Spallanz.

This species is pellicul and smooth, with a blue canal within branching into two arms, and two transverse blue lines just beneath the middle of the body.

**Radius.** Oval, with distinctly visible intellines. Hermann. *Cyclus corpore elliptico*, Hill; Spallanzani, &c.

Pellicul, with a blackish margin, and transparent vesicular intellines enclosed in a blueish pellicle.

**Glaucoma.** Oval, with the intellines hardly visible. Müll.

Found in water which had been kept in a flagrant flate for the space of six months; it is pellicul, and membraneous, with transparent greenish-blue intellines; the margin sometimes blackish.

**Cyclus,** a species of *Tachoda* and also of *Cer- caria*; which see respectively.

**Cyclicus,** (from *Cyclo*), *circulus*, an instrument in form of a half-moon; used by the surgeons to scrape the skull, in fractures of that part.

**Cyclogaster,* in *Ichthyology,* the *Cyclopterus Liparis* of Gmelin; which see.

**Cyclograph,* in *Practical Geometry,* an instrument contrived, as its name imports, for describing the archs of circles, and applicable to other useful purposes. This instrument (Plate IV. Geometry, fig. 1.) is composed of five rulers: four of them, D E, D F, G F, and G F, forming a trapezium, are moveable on the joint, D, E, F, and G; the fifth ruler, D L, slides under the joint D, and through a socket carrying the opposite joint G. The distances from the centre of the joint D, to that of the joints E and F, are exactly equal, as are the distances from G to the same joints. The rulers, D E and D F, pass beyond the joints, E and F, where a roller is fixed to each; the rollers are fixed upon their axes, which move freely, but steadily on pivots, so as to admit of no shake by which the inclination of the axes can be varied. The ruler, 1 L, passing beyone

\[4S2\]
the joint D, carries a third roller A, like the others, whose axis lies precisely in the direction of that ruler; the axes of B and C extend to K and L.

A scale is put on the ruler D I, from H to C, flowing, by the position of the socket, G, thereon, the length of the radius of the arc in inches, that would be defended by the end I, in that position of the trapezium. When the socket, G, is brought to the end of the scale near I, the axes of the two rollers B and C, the ruler D I, and the axis of the other A, are precisely parallel; and in this position, the end I, or any other point in D I, will describe straight lines at right angles to D I; but on sliding the socket, G, towards H, an inclination is given to the axes of B and C, so as to tend to form a point in the line I D, continued beyond D, whose distance from I is flown by the scale.

A proper socket, for holding a pen or tracer, is made to put on the end I, for the purpose of describing arcs; and another is made for fixing on any part of the ruler D I, for the more convenient description of concentric arcs, where a number are wanted.

It is plain from this description, that the middle ruler, D I, in this instrument, is a true oblique ruler, by which lines may be drawn tending to a point, whose distance from I is flown by the position of the socket, G, on the scale; and the instrument is made sufficiently large, so as to answer this purpose as well as the other.

In this instrument the part, intended to be used in drawing lines, lies within the trapezium, which on that account is made large; but this is not necessary. Fig. 2. exhibits another instrument of a similar kind, in which the trapezium may be made much smaller, and consequently less cumbersome.

D B E C represents such a trapezium, rollers, socket, and scale as above described, but much smaller. Here the ruler, E D, is continued a sufficient length beyond D, as to A, where the third roller is fixed; a pen or tracer may be fitted to the end E, or made to slide between D and A, for the purpose of drawing arcs. Adam's Geometrical and Graphical Essays, p. 151, &c.

CYCLOID. If a circle, E P F (fig. 1.), be made to roll along a right line, A B, in the same plane with the circle, until a fixed point, as P in the circumference, which at first touched the right line at A, comes to touch it again at B, after an entire revolution; then the curve, traced upon the plane by the point P, is called a cycloid. This curve is familiarly illustrated by the track made in the air by a nail in a coach-wheel; a track which would be a perfect cycloid, could we suppose such a motion to be quite free from all the irregularities by which it is subject. The same curve is sometimes called a trinoid; and, by the French mathematicians, a roulette.

The cycloid is not a curve of great antiquity. Cardinal Cusa, about 1454, and a person whom Dr. Wallis names Carolus Bovillus, in 1500, in searching for the quadrature of the circle, both thought of rolling a circle along a right line, with the view of marking off a part equal to the periphery: but as they neither paid any particular attention to the curve traced by a fixed point in the circumference of the circle, nor gave a name to the line so described, their claim to the invention of the cycloid, although it is asserted by Dr. Wallis, seems to rest on very slender foundations. It appears from a letter written by Galileo to Torricelli, that the former of these celebrated men was more justly to be considered as the inventor of this curve, which he began to contemplate about 1559, and to which he gave the name of a cycloid, that it fills bears. He informs us, that the shape of the cycloid seemed to him to be very proper for the arches of a bridge. He likewise made some attempts to discover the proportion of the area of the curve to the area of the generating circle. In these attempts he was not successful; but the method which he employed, as related by Torricelli, if it reflect little credit on the geometrical invention of Galileo, deserves at least to be mentioned on account of its singularity. Having chosen some sublimity of an equable thickness and uniform texture, he cut it in the shape of a cycloid, and then, by weighing it, he tried to discover the proportion of the surface of the curve to the surface of the generating circle.

The invention of the cycloid is likewise ascribed, by the French writers, to Merfenne, who, without knowing that the same curve had already been noticed by Galileo, is said to have remarked it about 1615, when considering the motion of a wheel. It is certain that Merfenne first drew the attention of mathematicians to this curve. He proposed the problem concerning the area of the cycloid to Roberval, who appears to have discovered, about 1634, that the whole area was equal to three times the area of the generating circle. The determining of the tangents of the same curve, at that time a problem of no little difficulty, was accomplished by Des Cartes and Fermat. Merfenne, who carried on a correspondence with most of the learned men of his time, informed Galileo of the problems concerning the cycloid, which then occupied the attention of the French mathematicians; and, by this channel, the same curve came to be the subject of consideration in Italy. Torricelli reduced the problem concerning the area of the curve; and Viviani found the method of drawing tangents to it: and these discoveries were communicated to the public in an appendix to the works of Torricelli, printed in 1644. On this occasion, a keen contestation arose between Roberval and Torricelli concerning the originality of the discoveries made in Italy. The investigations of the French mathematicians were certainly prior in point of time; but, although they were handed about among the learned in France, they were not given to the public through the medium of the press: and there appears to be no good ground for the charge of plagiarism made by Roberval, which the original term of the demonstrations of Torricelli likewise helps to refute.

Pascal, under the signified name of Dettonville, in 1658, proposed some problems concerning the cycloid to the contemporary mathematicians; and he engaged to give certain prizes to such as should resolve them against a limited time. In these problems it was required to find the dimensions of the segments of the cycloid, and of the solids generated by the rotation of these segments, and to determine the centres of gravity of the same faces and solids: all matters of the greatest difficulty, and within the reach of mathematicians of the first rank only. On this occasion, many curious discoveries were made. Huyghens found out the exact quadrature of a definite portion of the cycloid; and Wren discovered the rectification of its areas. But there were only two competitors, who, having considered all the problems of Dettonville, could have any pretensions to the prize. These were Dr. Wallis and La Loucre, a Jesuit of Tou- louf: and, on comparing the two performances given in the superiority of that of the former was undisputed. The prize was not, however, awarded to Dr. Wallis: there were some mistakes in his calculations, and some errors in his results, which, in the opinion of the judges, justified them for withholding it. Dr. Wallis, on the other hand, contended that he had resolved all the proposed problems; and, although he admitted that there were mistakes in his original paper, some of which he had corrected by letters sent subsequent to the delivery of it, he asserted that these mistakes were
were neither very essential, nor of such a nature as to let
side his claim by the conditions of the proposer. Thus
this curve, like the apple of discord, was again the occasion
of dispute and diffusion.

In proportion as mathematicians advanced in their re-
searches concerning the cycloid, the more interesting and
remarkable did it appear for its curious and singular prop-
erties. Leibnitz found out another definite portion of the
curve admitting an exact quadrature, different from that al-
ready discovered by Huyghens; and John Bernoulli showed
how innumerable spaces, all exactly quadrable, may be
determined: a discovery that included in it, as particular ca-
es, the two portions of Huyghens and Leibnitz. A still
more curious and singular property is due to Huyghens, who
demonstrated that the curve produced by the evolution of a
femi-cycloid is another semi-cycloid, precisely equal to the
first. Nor is the cycloid less remarkable for its mechanical
than for its mathematical properties. Huyghens, by his re-
searches concerning pendulum-clocks, was led to investi-
gate the nature of the curve, along the arcs of which,
whether great or small, the times of descent, or oscillation,
of a heavy body, should be perfectly equal; and he found
that the curve posseffed of this curious property was no other
than the cycloid. In 1667, John Bernoulli proposed the fol-
lowing problem to all the mathematicians of Europe: Sup-
pose a heavy body, to fall through a given height, in a
direction oblique to the horizon, what is the nature of the
curve along which it must descend, that the time of falling
may be the least possible? It is extremely natural to sup-
pose, that the time of descent would be least along the right
line, which is the shortest distance between the beginning
and end of the fall: but a little reflection is sufficient to cor-
rect this first suggestion of the kind; and it has been de-
monstrated, that the cycloid is the curve which, in this in-
stance, likewise answers the required conditions.

In treating of the cycloid, we shall first demonstrate, as
succeflly as possible, the geometrical properties on which
its mechanical properties depend; these will engage our at-
tention in the second place; and we shall, in the last place,
notice the more remarkable propositions concerning the cy-
cloidal spaces.

1. If we suppose the fixed point in the circumference of the
circle (fig. 1.), or the generating point of the cycloid,
to have touched the base-line, first of all at A, it readily fol-
loows, from the manner in which the curve is describ'd, that
when the circle has arrived at any other position, as P E E,
the right line, A E, between A and the point of contact E,
is exactly equal to P E, the arc of the circle between the
fixed point, P, and the same point, E: and hence, A B, the
whole base, is equal to the whole periphery of the gen-
erating circle. When this curve has made exactly half a re-
volution, as in the position C Q D, then the describing
point will be at C, diametrically opposite to the point D,
in which the circle touches the base line; and consequently
C will be the point of the curve farthest removed from the
base, A B. It is also sufficiently plain, that the same curve
will be describ'd, whether the circle be roll'd from A to B,
or back again from B to A; whence it appears that the
part of the cycloid between A and C is similar to the part
between B and C.

The line, A B, is called the base of the cycloid.

The point, C, its vertex; the line, C D, bisecting the
curve, its axis; the circle, C Q D, upon the axis, the gen-
erating circle.

A line, as P R, parallel to the base, and bound'd by
the curve and the axis, is called an ordinate; and C R, the
distance of the ordinate from the vertex, the corre-
spounding abscissa.

2. That part of the ordinate of a cycloid, between the
curve and the convexity of the generating circle, is equal to
the arc of the generating circle between the ordinate and
the vertex; that is, P Q = arc C Q. If the de-
scribing point is at P, let the revolving point touch the
base at E; draw the diameter, E F, and join P E, Q D.
Because the diameters E F and C D, are both perpendicu-
lar to A B, it is plain that arcs, E P, and D Q, of equal
circles, have equal vertical lines; consequently these arcs
will be equal to one another, and their chords, which make
equal angles with the diameters E F and C D, will be par-
allel to one another. Hence E P Q D is a parallelogram,
and P Q = E D. Again, the semi periphery C Q D =
the right line A D, and the arc Q D = arc P E = right line
A E: therefore the arc C Q = the right line E D = P Q.
The whole ordinate P R is equal to the arc C Q, to-
gether with its right line Q R.

If the radius of the generating circle be supposed = r,
and the length of the arc C Q = x; then the ordinate of
the cycloid P R = x + sin. x, and the correspondent
abscissa C R = r - cos. x. Thus it appears that the rela-
tion between the abscissa and the ordinate of this curve can-
not be algebraically expressed by an equation of a finite
number of terms; and therefore the cycloid belongs to the
clafs of transcendent, or mechanical curves.

3. If an ordinate of a cycloid, as P R, cut the generat-
ing circle in Q, and Q C be drawn to the vertex; then a
line drawn through P, (fig. 2.) parallel to Q C, is a tan-
gent of the curve.

Let a and b be any two points of the curve on oppo-
site sides of P, and from these points draw two ordinates to
meet the generating circle in m and n, C Q or the base
line produced in H and K, and the line drawn through P
in M and N: also let a line touching the circle at Q, meet
the two ordinates at S and T, and C E parallel to P R in
E. It is plain that C E is a tangent of the circle: there-
fore C E = Q E, and consequently, Q S = S H, and
K T = T Q. Therefore m H = H S - S m = Q S -
S m, is less than the chord Q m, and much more is it less
than the arc Q m. But, as has been shewn, P Q, or M H,
= arc C Q; therefore M H - H m, or m M, is greater
than arc Q C - arc m Q, that is, than arc m C, or the
right line m a. Again, K n = K T + T n = Q T +
T n, is greater than the arc Q n; for Q T + T n is
greater than the sum of two tangents, Q O + O n, drawn
from the extremities of the arc Q a: (20. i. E.) therefore
K N + K n, or N n, is greater than arc C Q + arc Q n,
that is, than the arc C n, or the right line n b. And be-
cause m m is greater than m a, and N a, likewise greater
than n b, therefore the right line drawn through P
to C Q, will meet the cycloid only in the point P, and,
every where else, will be without the curve; therefore it is
tangent.

This demonstration, which is very elegant and geometri-
cal, is due to Wren; it is published in an Appendix to Dr.
Walls's Treatise on the Cycloid. The same conclusion
might have been derived from the common method for
the tangents of curves line.

Let the tangent of the cycloid at P meet the axis produced in F; then, agreeably to the
general method,

\[
\frac{P R}{R F} = \frac{\text{fluxion of } P R}{\text{fluxion of } R F} = \frac{\sin x}{1 - \cos x}
\]

Therefore the tangent P F is parallel to C Q.

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4. Let two equal semi-cycloids, ACD and FAE, (fig. 3.) be placed in such a manner that their bases may be parallel, and the extremity of the base of the first may be upon the vertex of the second; then will the first be described by the evolution of the second. Let NH, a tangent of the second cycloid, meet the base of the first in H, and describe a circle equal to the generating circles of the cycloids to touch the same base in H, and produce NH to cut this circle in P: draw the ordinate NML, and the chord AM. Because NH is a tangent of the cycloid, it is parallel to the chord AM. And because AH is a common tangent of two equal circles, and the chords AM and PH are drawn from the points of contact to make equal angles with the common tangent, it is plain that these chords will divide the two equal circles into segments that are respectively equal to one another; therefore the arc AM is equal to the arc PH. But the arc AM is equal to MN, or to AH; therefore the arc PH is equal to AH. Therefore when the revolving circle, by which the cycloidal arc AC is generated, comes to touch the base at H, the describing point will fall upon P, which is consequently a point in the curve. Draw the ordinate PQR, the chords Q,E, M, and ST, touching the cycloid at P: because the arc PH is equal to the arc AM, the chords of these arcs are equal and parallel, and hence AL = DR, and CR = LE; therefore the chord QE is equal and parallel to the chord ME: but ST is parallel to QE, and therefore it is also parallel to ME. Therefore because AM is perpendicular to ME, NP (parallel to AM) is perpendicular to ST (parallel to ME.) Thus all the tangents of the semi-cycloid ANF cut the semi-cycloid APC at right angles; and consequently, by what was proved of evolute and involute curves, under the head *evolutare, the former cycloid is the evolute of the latter.

5. An arc of a cycloid between the vertex and an ordinate, is double of the chord of the arc of the generating circle, between the vertex and the ordinate; that is, the arc AN is double of the chord AM. For if a thread be lapped upon the semi-cycloid ANF, and, while the end that falls on P remains fixed, the other end, that falls on the vertex A, be moved so as to keep the thread always tight, and to draw it from the curve; then, by what has been proved above, the moveable end of the thread will describe the semi-cycloid APE; and, in every position of the thread, it is plain that the part of it which is detached from the curve, as NP, is equal to the arc AN, from which it has been unrolled. Now it is manifest, from what has already been shown, that PH = AM = HN; therefore the cycloidal arc AN is equal to the double of the chord AM.

Hence it appears that the whole arc of the semi-cycloid is double of the diameter of the generating circle.

This curious influence of the exact equality of the arc of a curve to a right line, is due to Wren: and it is the second influence of the kind that was discovered, the rectification of the parabola parabolæ having been the first. The demonstration here given of it is taken from Mr. Huyghens's treatise, Horologium Ochamaticum. Wren's own investigation is to be found in the Appendix to Mr. Wallis's treatise, De Cycloide.

The same conclusion may readily be obtained by the method of fluxions. For, the square of the fluxion of the arc $P$ is $x^2 \times \cos \frac{x}{2}$, the fluxion of $PR$ is $\frac{1}{2} x \cos \frac{x}{2}$, and the arc $P$ is $\frac{4}{3} \sin \frac{x}{2}$: therefore, the fluxion of the arc $PC = 2 \times x \times \cos \frac{x}{2}$, and the arc $PC = 4 \sin \frac{x}{2}$; but a fin. $x$ = chord $CQ$; therefore, the cycloidal arc $PC = 2$ chord $CQ$.

Having now noticed the most remarkable geometrical properties of the cycloid, as far as is consistent with our plan, we are next to consider its chief mechanical properties.

6. Let a cycloid be placed with its base horizontal, and its vertex downward, as ABC (fig. 4.) then, if a body descend along the cycloidal arc, the increment of the velocity produced by the accelerating power of gravity in some small portion of time, as the 10th or 100th part of a second, at any part of the curve, as M, will be to the increment of the velocity, produced in the same small portion of time, at any other part of the curve, as N, as CN, the arc of the curve between the vertex and the first point M, is to CN, the arc between the vertex and the second point N. It is to be recollected that the force of gravity acts equally on all bodies in all circumstances; that it produces the same augmentation of velocity in a given time in a body descending with the greatest swiftness, as in one just beginning to obey its power. It is to be recollected too, that, when a body is made to descend along an inclined plane, part of the accelerating power of gravity is destroyed by the resistance of the plane, and the remaining part only (which is less than the whole accelerating force of gravity in the same proportion that the length of the inclined plane is greater than its height) is employed in increasing the velocity of the descending body. These things being premised, draw MR and NS tangents of the cycloid; draw also the ordinates MFP and NQG, and the chords of the generating circle CP and CQ. In a very small portion of time, as the 10th or 100th part of a second, the increment of the velocity of a body descending along the cycloidal arc at M, may be considered as equal to the increment of the velocity along the inclined plane MR, which touches the cycloid at M; but MR is parallel to PC; and the increment of velocity produced by the whole accelerating power of gravity, is to the increment of velocity produced in the same time on the inclined planes MR or PC, as PC is to CE, or as DC is to PC; therefore, the increment of velocity produced by the whole accelerating power of gravity, is to the contemporaneous increment of the velocity of a body descending along the cycloidal arc at M, as DC is to PC.

And in the very same manner is it shown, that the increment of velocity produced by the whole accelerating power of gravity in a very small portion of time is to the contemporaneous increment of the velocity of a body descending along the cycloidal arc at N, as DC is to CQ. Therefore it follows (ex aequo) that the increment of velocity in the cycloid at M is to the increment of velocity at N, as the chord PC is to the chord CQ. Now the chord PC is the half of the arc CM, and the chord CQ the half of the arc CN; whence the proposition is manifest.

7. Supposing a cycloid to be placed as before, the time, in which a heavy body descending along the curve will reach the vertex or lowest point, is the same whatever be the length of the plane, though the body has fallen. For the sake of presenting a more precise object to the mind we shall suppose that the arc CM is double of the arc CN, fig. 4; and it is to be proved that the times of falling through the arcs are exactly of the same duration. The descending bodies being supposed to be let go from the 8
points M and N at the same instant, let them arrive at the points m, m', m'', ... n, n', n'', ... at the end of any very small equal moments of time, as 10th parts or 100th parts of a second. On the supposition that has been made it will follow, from what was proved (art. 6), that the velocity generated in the cycloid at M in one moment of time will be double of the velocity generated at N in the same time; therefore the velocity with which the one body arrives at m, will be double of the velocity with which the other body arrives at n. It is no less evident that the little arc Mm described by the first body is double of the little arc Nu, described by the second body; consequently the arcs m'nm and n'un', that remain to be described, have the same proportion as the whole arcs CM and CN; therefore, in a second moment of time, the increment of velocity at m will be double of the increment of velocity at n (art. 6). And because the whole velocities, already acquired at m and n, are double one of another, and the new increments superadded likewise follow the same proportion, therefore, at the end of the second moment of time, the whole velocity acquired at m will be double of the whole velocity acquired at n, and the space m'm'' will be double of the space n'n''. Again, because m'm'' is double of n'n'', therefore the arcs Cm' and Cn'', that remain to be described, will still have the same proportion as the whole arcs CM and CN, and consequently the increments of velocity generated in a third moment of time, as well as the spaces run through, will be double of what is proved before. To find the proportion of the arcs as well as the space at the expiration of the third moment, the whole velocities acquired, and the arcs Cm'' and Cn'' that remain to be described, will both have the proportion of 2 to 1. And because the same reasoning may be continued indefinitely, it follows, that at the end of any proposed time from the beginning of the falls, the whole velocities acquired, and the parts of the arcs that remain to be described, preserve invariably the same proportion as the original arcs CM and CN, that is, in the present instance, the proportion of 2 to 1; hence it is manifest, that the falls through the whole arc are accomplished in the same time.

Although, in this demonstration, the arc CM is supposed to be double of the arc CN, yet the proposition is to be held as proved generally for all proportions of the arcs; for the reasonings do in no respect depend upon the particular proportion supposed, but are equally applicable for all proportions.

Not only are the falls through the whole arcs MC and CN performed in the same times, but the same thing is likewise true of the falls through any proportional parts of the same arcs. For the parts Mm, m'm', m'm'', ... Nn, n'n', n'n'', ... of the two arcs that are described in the same moments of time, have been shown to be respectively in the same proportion as the whole arcs, and therefore any aggregates of those parts will compose like parts of the whole arcs.

When a heavy body has descended through an arc of the cycloid, it will have acquired such a degree of velocity as is sufficient to make it ascend through an arc in the opposite part of the curve equal to that it fell through; it will then be reduced to a state of rest, after which it will fall back to the lowest point of the curve, and again mount up to the same height as at first. A body that thus descends and ascends is said to oscillate or vibrate; and the time employed in one descent and ascent is called the time of an oscillation or vibration. When a body oscillates in a cycloid, placed as has been supposed, all the oscillations will be performed in equal times, whether they be wide or narrow; for the times of ascent and descent being equal, the time of an oscillation will be double of the time of descent.

Galileo first remarked that the vibrations of a pendulous body, suspended by a string, or chain, were isochronous, or of equal duration; and this discovery had been applied in astronomical observations. Two things rendered the use of such pendulums very imperfect even for the purposes of astronomy; they required the constant attention of the observer to number the vibrations, and to communicate new velocity as the motion was destroyed by the resilience of the arc. Galileo had turned his thoughts to remedy these imperfections; but in this research he was not successful. Huyghens first entertained the idea of applying a pendulum to regulate the motion of a piece of mechanism, whilst at the same time the moving power of the machine should act on the pendulum in such a manner as to keep its motion from beingspent; and he thus accomplished an invention of the greatest utility in common life, and no less essential to the improvement of some of the sciences, particularly astronomy. Galileo thought that all the vibrations of a pendulum swinging in a circle, whether great or small, were of equal duration; but a little experience was sufficient to correct this erroneous opinion. Huyghens, aware that the narrow vibrations in a circle were performed in shorter times than the wider ones, was led to investigate the curve in which all the oscillations, whether wide or narrow, would be perfectly isochronous; and on this occasion he discovered those curious properties of the cycloid, which he has demonstrated with all the elegance and rigour of the ancient geometry, in his Horologium Oscillatorum.

But it was not sufficient to have discovered the curve in which the oscillations would be of equal duration; a method was likewise wanted for making the body oscillate as required. A new research was thus presented to Huyghens, and from this sprung his beautiful theory of evolutes and involutes curves.

Fig. 5. If two moulds, shaped like a femicycloid, be placed so as to have their bases horizontal and to touch one another in F, from whence a pendulum is suspended by a flexible thread equal in length to the whole femicycloid, or to twice the diameter of its generating circle, it is plain, from what is proved in art. 4, that such a pendulous body will vibrate in a cycloid, and will perform all its vibrations in equal times; for the curve described by the vibrations is made up of the involutes of the femicycloids AF and FP, which taken together compose a cycloid equal to the evolutes, and so placed as to have its base horizontal, (Art. 6). It is not a little mortifying that the finest inventions, which have cost much pains and ingenuity, are often of little practical utility. This has been the fate of Huyghens's theory in the present instance. The perfect isochronism of the cycloidal vibrations is more than counter-balanced by the unavoidable imperfections of the mechanism which they require, and they are universally rejected in practice for circular oscillations in small arcs.

8. A cycloid being supposed to be placed as before, the time in which a heavy body, that descends through any arc of the curve, will reach the lowest point, is of the same duration as the time in which a heavy body will fall through the diameter of the generating circle, as half the circumference of a circle is to its diameter.

As the times of descent in all arcs (Fig. 6) of the cycloid are of equal duration, we shall consider the fall through
through the half of the curve. Suppose then, that a heavy body, which has begun to fall at $B$, is come to $M$; draw the ordinate $MQ$, and the chord of the generating circles $DQ$, $QO$; let $Mm$ be a part of the curve moved through in a very small, but finite, portion of time, as the 10th or 100th part of a second, draw $mnr$ parallel to $MP$, and $QO$ to the centre of the generating circle. Because the tangent of the cycloid at $M$ is parallel to the chord $QO$, therefore $nQ = Mm$. There is no proposition respecting motion more familiar than this, that the velocity acquired by a heavy body in descending from any height is the same, whether the fall be made directly in the perpendicular, or obliquely on an inclined plane, or along any arc of continued curvature; from this it follows, that the velocity acquired by descending through the arc $BM$ is equal to the velocity acquired by falling directly through the height $DP$; therefore the velocity in the curve at $M$ is to the velocity acquired by falling through the diameter $DC$ (which velocity we shall denote by $a$) in the subduplicate proportion of $DP$ to $DC$, or as $DQ$ is to $DC$; therefore, taking the halves of the consequents, the velocity in the curve at $M$ is to the velocity $a \div 2$ as $DQ$ is to $DO$. Because the angles $DQC$ and $QOR$ are right angles, therefore the angle $DQO = \angle nQR$. Also the angle $DQO = PQC = \angle nQR$; therefore the triangles $ODQ$ and $nQR$ are similar; consequently $OD$ is to $DQ$ as $nQ$ or $Mm$ is to $QR$. Hence it is manifest that the velocity in the curve at $M$ is to the velocity $a \div 2$ as $Mm$ is to $QR$; therefore a body moving with the velocity $a \div 2$ would describe the little arc $QR$ in the same time that the descending body moves through the little arc $Mm$. The same thing may be demonstrated of all the little arcs that compose the whole semi-cycloid $BMC$, and the corresponding parts that make up the whole semi-circle $DQC$; therefore the whole time of the fall through the semi-cycloid $BMC$, is equal to the time in which the semi-circumference $DQC$ would be described with the velocity $a \div 2$. But the time of falling perpendicularly through the diameter $DC$, is equal to the time in which the same diameter $DC$ would be described with the velocity $a \div 2$. Hence it follows that the whole time of descent along the semi-cycloid is to the time of falling perpendicularly through the diameter $DC$, as the semi-cycloid $DQC$ is to the diameter $DC$.

The whole time of a complete oscillation in any arc of a cycloid, is to the time of falling perpendicularly through the diameter of the generating circle as the circumference of a circle is to its diameter; for the time of an oscillation is double of the time of descent through the arc.

If a circle be described from $F$, the point of suspension of a pendulum that vibrates in a cycloid so as to touch the cycloid at its lowest point, ($fg$, $g$) this circle will be the oscillating circle of the curve (Art. 6) and the time of a vibration in the cycloid will approach the nearer to an equality with the time of a vibration of the same pendulum in the circle, the less is the arc of the circle the pendulum moves through. The time of vibration in an arc of the circle, how small forever, will indeed be always greater than the time of vibration in the cycloid; but, when the circular arc is very small, the difference of the times is insensible.

Hence we learn the reason of the isochronism of vibrations in small circular arcs.

And hence too it is plain, that the time of a complete vibration in a small arc of a circle, is to the time of falling perpendicularly through half the length of the pendulum, as the circumference of a circle is to its diameter; for the time of vibration in the small circular arc, may be considered as equal in duration to the time of vibration of a pendulum of equal length in a cycloid.

By means of experiments made with pendulums, we can discover with great accuracy, the measure of the accelerating force of gravity, or the space through which a falling body will move in a given time. Thus, suppose $l$ to be the length of a pendulum which has been found by experiment to vibrate once in a second, and let $\pi \beta = 3.1416$ the periphery of a circle whose diameter is unit; then $l$ will be the measure of the velocity acquired in falling through $\frac{1}{2}$ half the length of the pendulum, and $\frac{\pi l}{2}$ will be the measure of the velocity acquired in the time of one vibration of the pendulum, that is, in a second: let $x$ be the space fallen through in the same time, then, because the spaces fallen through are proportional to the squares of the velocities acquired, $\frac{x}{l} = \frac{\pi l}{2}$; or therefore $x = \frac{\pi l}{4}$. In this manner it is found that a heavy body moves through $16 \frac{1}{2}$ feet in the first second of its fall, and acquires a velocity of $32 \frac{1}{2}$ feet per second.

We should next shew that the cycloid is the curve of swiftest descent; but this property cannot be clearly demonstrated, without entering upon considerations which would take up too much of our room for a matter of speculative curiosity. We proceed to finish what we have to say of this interesting curve, by noticing the most remarkable things that have been discovered concerning the mensuration of the cycloidal spaces.

9. Let $MP$ ($fg$, $7$) be an ordinate of the cycloid, and draw the tangents at the extremities of the arc $MF$, to meet in $N$, and also the chord of the generating circle $FQ$; then $N$ is the mixtilinear space bounded by the cycloidal arc $MF$, and its two tangents equal to the segment of the generating circle cut off by the chord $FQ$. Divide the circular arc $FQ$, into an indefinitely great number of equal parts $Qa, ab, \&c$., and draw the ordinates $a, b, \&c$., and also the chords of the generating circle $Fa, Fb, \&c$., and the lines $g, f, b, \&c$, touching the cycloid at $c, d, \&c$. Because the several tangents of the cycloid are respectively parallel to the chords $FQ, Fa, Fb, \&c$, and $FN$, which touches the cycloid at the vertex, is parallel to $MQ, ca, db, \&c$., therefore $FN = MQ = arc \ FQ$; $Fe = ea = arc \ Fa$; $Ff = db = arc \ Fb, \&c$. Therefore, $Ne = arc\ Qa, ef = arc \ ab, \&c$. And because what has been shewn is true, whatever be the number of the parts into which the arc $FQ$ is divided, it will still be true when the number of parts is so great that the little area $Qa, ab, \&c$, may be regarded as right lines: but when this is the case, the little triangles $a Q F, a F, \&c$ are plainly equal to the little triangles $Ng e, e f, \&c$ each to each: for the bases of the triangles have been shewn to be equal; and the angles which the chords make with the periphery at $Q, a, b, \&c$ are equal to the angles which the same chords make with the periphery, or with the tangent of the periphery, at $F$, that is, to the angles which the tangents $MN, g, e, b, \&c$ make with the same tangent $FN$. Therefore the mixtilinear space included by the cycloidal arc and its two tangents, which is the aggregate of one of the
the sets of triangles, is equal to the circular segment, which is the aggregate of the other set of triangles.
In the case of the semi-cycloid A P, the mixtilineal space, A P T, is equal to the semicircle C Q D; and because the whole rectangle, A T F D, contained by the diameter and the semi-periphery, is equal to four times the same semicircle; therefore the semi-cycloidal space, A P T, is triple of the semicircle, and the whole area of the cycloid is triple of the area of the generating circle.
If M K be drawn perpendicular to F N, then the external space M K E, is equal to the circular space F Q P: for the triangle, M N K, is equal to the triangle F Q P.
10. If the ordinates M P and N Q, (fig. 8.) cut off abscissas from the axis whose sum is equal to the radius of the generating circle, and if the chord, M N, be drawn, the cycloidal segment, M C N, will be equal to the sum of the rectilinear triangles D R Q, and D S P. Let O be the centre of the generating circle, and draw M K, N H, perpendicular to the tangent through the vertex. The trapezoid K M H N is equal to M K + H N = \( \frac{1}{2} CO \times KH \) (hyp.) = \( \frac{1}{2} CO \times MP + \frac{1}{2} CO \times Q N \). Now, \( \frac{1}{2} CO \times MP = \frac{1}{2} CO \times MS + \frac{1}{2} CO \times SP = \frac{1}{2} CO \times arc. CS + \frac{1}{2} CO \times SP = \) mixtilineal area S D C; and in like manner is it shown, that \( \frac{1}{2} CO \times Q N = \) mixtilineal area C D R. Therefore the trapezoid K M H N is equal to the area S D R. But the outward spaces M K C and N H C, are equal to the mixtilineal area C S P, and C R Q; therefore the remainders are equal; that is, the segment, M C N, is equal to the sum of the two triangles S D P and R Q D. This property of the cycloid was discovered by John Bernoulli.
When the ordinates, M P, and N Q, coincide in one, as m m, the abscissas cut off will be half the radius C O: then the segment, m C n, will be equal to the triangle S D R, which is the equilateral triangle inscribed in the generating circle. The quadrature of this segment of the cycloid was discovered by Huyghens.
On the other hand, when one of the abscissas vanishes, and the other becomes equal to the whole radius; then the cycloidal segment, C I, will be equal to the triangle D O E, that is, to half the square of the radius. The quadrature of this segment was discovered by Lutnitz.

Prostrated and Contracted Cycloid.—Supposing a circle, or wheel, to roll along a right line; let a fixed point be assumed, not in the periphery, but within it; and then such a point, in one entire revolution, will trace a curve line, the base of which is equal to the whole periphery of the rolling circle, and therefore greater than the periphery of the concentric circle drawn through the fixed point: the curve line, so described, is called a prostrated cycloid.
And if a point is assumed without the rolling circle, then a point will trace a curve line, the base of which will be the same as before, and therefore less than the periphery of the concentric circle drawn through the fixed point: the curve line, so described, is called a contracted cycloid.

Let m denote any number, or proportion, then if a curve line be constructed by making the absciss = \( m^2 \) - Cof. x, and the correspondent ordinate = \( m \times x + \sin. x \): this curve will be a prostrated cycloid when \( m > 1 \); it will be a common cycloid when \( m = 1 \); and a contracted cycloid when \( m < 1 \). What is here said, is easily deduced from the definitions that have been laid down: and the nature of the curves being now defined by an equation, their properties may be investigated by the common analytical process so well known.
It is asserted above, that the whole base of a prostrated cycloid is equal to the periphery of the rolling circle; and this cannot be doubted: but, because every point of the periphery of the smaller concentric circle drawn through the fixed point, is successively applied to the same base during the description of the curve; it has been contended that the same line is also equal to the periphery of the smaller circle.
By this reasoning, it has been thought the circumference of the nave of a coach-wheel is proved to be equal to the periphery of the outer rim. How is the incongruity to be explained? This curious mechanical problem was first proposed by Arithotle; and that philosopher himself, as well as many others, have given solutions of it which are not, in every instance, completely satisfactory.
The difficulty will be best unravelled, by separating into its elementary parts the complex motion by which the cycloids are described. It is plain that two motions are combined together in the description of these curves; one of them, an angular motion round the centre of the rolling circle, or wheel; the other, a progressive motion by which the centre is carried forward in a right line. These two motions are perfectly distinct and independent of one another; and the rolling of a circle or wheel along a right line, is to be considered as nothing more than the mechanical means of combining them in the requisite proportion.
Instead of a circle rolling on a right line, conceive a wheel turning upon an axle, while the axle itself is made to move in a rectilinear course; it is manifest that the two cases differ in no respect, and are to be considered as equivalent. The two motions being now conceived in a detached and separate manner, the rectilinear space through which the centre is carried, may be supposed to bear any required proportion to the circular arc, that the fixed point moves over in the same time: now if the rectilinear space be exactly equal to the circular arc, we have the case of the common cycloid; if the rectilinear space be greater than the arc, we have the case of the prostrated cycloid, where the line moved through by the progressive motion of the centre, by the very supposition made, is greater than the arc described in the same time; and if the rectilinear space be less than the arc, we have the case of the contracted cycloid, where the line moved through by the progressive motion is less than the arc described in the same time.
If a circle be made to roll upon the circumference of another circle, instead of a right line, a new set of curves, called epicycloids, will be generated by a fixed point in the plane of the rolling circle. These curves, which are useful in determining the figure of the teeth of wheel-work, will engage our attention under another head.

**CYCLOIDAL SPACE.** The space contained between the cycloid and its frustra.

**CYCLOMETRY.** From κύκλος, circle, and μέτρον, a measure, the art of measuring cycles, or circles.

**CYCLOPÆDIA,** from κύκλος and παιδία, instruction, the circle, or compendium of arts and sciences; more ordinarily called *encyclopedia.*

The word *encyclopedia* is not of classical authority, though frequent enough among modern writers, to have got into several of our dictionaries. Some have confounded it for having called the present work by this name; not considering that names and titles of books, engines, instruments, &c. are in a great measure arbitrary; and that authors make no scruple even of coinage new words on such occasions, when there are no old ones to their mind. Thus it is Dr. Hooke calles
calls his first book of microscopical observations, Micrographia; Wollaston's book on the air, Aerometria; Drake's book of anatomy, Anthropologia, &c.; all of them words of modern, if not of their own fabric; and on no better authority found the names of half our later inventors, as microscope, telescope, barometer, thermometer, micrometer, &c. But it is suggested the word cyclopedia is ambiguous, and may denote the science of a circle, as well as the circle of sciences: we answer, that as cullum, the only sovereign rule of language, has determined the word to the latter sense; it is no more chargeable with ambiguity than the plural for other words of received use; no more, for instance, than micrometer, which might either denote a little microbe, or a microscope of little things.

Cyclopes, in Entomology, a class of the monocular genus of insect, according to Muller, with two or four antennæ. See Monoculus.

Cyclopes, from κύκλος, and ὄς, eye, in Mythology, a people who were said to inhabit the western part of the island of Sicily, in the primitive times, together with the Leucogones. According to Jullian, Piny, Solinus, and Thucydidse, they were the first inhabitants of this island; and they are said to have settled in the territory of Leontium, and the districts in the neighbourhood of Mount Etna. Their origin, however, was unknown; and Thucydidse acknowledges, that he knew neither the country from which they came, nor that to which they afterwards removed. According to Heliod they were the sons of Uranus and Tellus, or of heaven and earth; but of Neptune and Amphitrite, according to Euripides and Lucian. They were called Cyclopes from their being described with but one eye, placed in the middle of their forehead, and were of gigantic stature: they were said to be the companions of Vulcan. They are represented as a people lawless, savage, and delighting in human flesh; which character arose from the cruel custom of sacrificing strangers whom fortune brought upon their coasts. It is related that Apollo killed the principal among them, for having forged the thunderbolts which Jupiter hurled against his son Heclus. The adventures of Polyphemus, the chief of these people, whose residence was near the foot of Mount Etna, with Ulysses and Galata, are well known.

The explanation of this allegory has been represented to be in a state of uncivilized nature; unfilled in the laws of civil society, and living in a state of continual force, having but one eye, which was light. Him Ulysses overcame by superior knowledge and experience. Homer, in his "Odyssey" (i. ix. v. 105, &c.), describes the Cyclopes as having no laws. Each, he says, governs his family, and rules over his wife and children. They trouble not themselves with their neighbours, and think not themselves interested in them. Accordingly, they have no assemblies to deliberate on public affairs; they are governed by no general laws to regulate their manners and their actions. Neither plant nor grow: they are fed with the fruits which the earth produces spontaneously. Their abode is in the summits of mountains, and caverns serve them for the retreat. Such is Homer's account of them. But though the Greek and Roman poets, and even Strabo, together with other respectable writers, have taken it for granted, that the Cyclopes of Homer were near Etna in Sicily; the poet does not once mention the island in his whole account of the Cyclopes; nor does Ulysses arrive in Sicily till after many subsequent adventures. His Cyclopes were, therefore, inhabitants of the continent. There were probably people of the same family in many parts of Sicily, who seem to have been of the Anakim race, and worshippers of the sun; especially about the city Camarina. The fable of their having only one eye, some have explained by observing, that they were the archers of their times, and that they usually shut one eye to take their aim in shooting. (Blackford's Conun. vol. iii. p. 52.)

The Cyclopes, according to Dr. Bryant, were a tribe of the ancient Amorians, of a race inferior to the common race of mankind, who settled in many parts of Greece. They were famous for architecture; and the idea of this people was borrowed from the lofty towers which they erected. As these buildings were often light-houses, and had, in their upper story, one round casement, by which they afforded light in the night, the Greeks made this circumstance characteristic of the people. They supposed this aperture to have been an eye, which was fiery and glaring, and placed in the middle of their foreheads.

The Cyclopes, says Pananias (ib. ix. p. 785.), were truly wonderful for the temples which they erected to the gods, and for the stately edifices which they built for men. When the Sabines in Virgil dwells on the place of honour in the shades below, and leads him through many melo-choy recollections, we find that the whole was separated from the region of bliss by a wall constructed by the Cyclopes. The Sabine accordingly at their exit tells him:

"Cyclopum eductis Carminis
Meana confpicio." 

From hence we find that they were the reputed builders of the infernal mansions: a notion which arose from the real buildings which they erected. For all the ideas of the ancients about the infernal regions, and the torments of hell, were taken from the temples in each country; and from the rites and inspiration practised in them. The Cyclopes, however, were more than imaginary operators. They founded several cities in Greece; and constructed many temples to the gods, which were of old in high repute. The Scholast upon Statius (Thebaid, i. i. p. 26.) observes concerning them, that every thing great and noble was regarded as Cycopian. These people are said to have built the ancient city of Mycenae, which Hercules in Seneca threatens to ruin.

"Quid moror? magis mibi
Belum Mycens reliquit, ut Cyclopea.
Evera manusque magnis nostris concidit." 

Hercules Furens, act. iv. v. 936.

They likewise built Argos; which is mentioned by Trysiles in Seneca (Act. ii. v. 466.) as a wonderful performance.

"Cyclopum Sacras
Turre, labeore miius humano decus." 

They built also several other cities in Greece, as Hermione, an ancient city, which flourished near a stagnat lake, called the pool of Achearusia, and a deep cavern, which was supposed to be the most independent passage to the shades below, near which yawned a cavern the Cyclopes chose to take up their habitation (Strabo, l. iv. p. 573.):—Tyrins, the walls of which were esteemed no less a wonder than the pyramids of Egypt (Paulan, l. i. p. 147, l. i. p. 78). Strabo, l. vii. p. 572.):—and they refided at Nauplia in Argolis, near which city were caverns in the earth, and subterraneous passages, confining of labyrinths cut in the rock, like the Syrinxes in Upper Egypt, and the maze at the lake Moeris, which were reported to be the work of Cyclopins. Euripides (Herc. Furens, v. 944.) speaking of the walls of ancient Mycenae, as built after the Punician
Phoenician rule and method, affects the country from which the Cyclopians came: the Phoenicians alluded to being the Phoenicians, to which country they are principally to be referred. The seven Cyclopi, who, according to the itineraries, built Thysdrus, were, as Ayant conjectures, seven Cyclopean towers built by these people: some of which were situated towards the horizon, to afford light to ships when they approached in the night. These towers were likewise erected for Puritali, or Puratiaka, where the ritual of fire were performed. Mr. Bryant conceives, that not only the common idea of the Cyclopians was taken by towers and edifices, that the term Kasiga, and Kasige, Cyclopes, and Cyclops, signified a building or temple, and from then the people had their name. They were of the same family as the Cadmus and Phæacians: and as the Hittites, or Ophites, who came from Egypt, and settled near Libanus and Daul-Heronom, upon the confines of Canaan. They worshipped the sun under the symbol of a serpent; and hence they were called, in different parts, the Serpentiali, or Serpentians. All which names relate to the worship of the Pytho, or Serpent. Our learned author does not determine the precise etymology of the term Kasiga, Cyclopes; but as a hermaphrodite, he was said to have been the son of Uranus and the earth, or earth and Uranos, among the Athenians, was often divided Cyclop, or Cyclopes, and was supposed under the emblem of a serpent. Hence the temple of the deity might originally have been called Cyclo-Cyclop, or Cyclo-Pythous; and the priests and people Cyclopians. The Cyclopians deified therefore, Uranus, and the Cyclopians were their priests and votaries. Some of the Cyclopians settled in Thrace, where was a place called Cyclopes; and many of the Athenians came hither; so that Thrace seems to have been the seat of science, and the Athenians acknowledged that they borrowed largely from there. The head of Medusa, like other devices upon temples, was esteemed a kind of talisman, and supposed to have an hidden and undotary influence, by which the building was preserved. It is probable that this opinion induced the Athenians to substitute the head of Medusa upon the walls of their acropolises. The notion of the Cyclops forming the thunder and lightning for Jupiter, arose chiefly from their engraving hieroglyphics of this kind upon the temples of the deity. Hence they were represented as serpents.

"Ω Ζεύς Βρέγη μ' α' Κύκλο, κυπέλλης τ' Κυπέλλων."
Heliod. Theogn. v. 141.

The poets considered them merely in the capacity of blacksmiths, and condemned them to the anvil. This, Mr. Bryant apprehends, arose from the chief Cyclopians being called Aecides, and Piraeides, and under the former title he was worshipped in Phrygia. As the Cyclopians were great artificers, they were probably famous for works in bronzes or iron; and this circumstance in their history may have been founded in truth. The Idæi Daéyli were Cyclopians; and they are said to have forged metals, and to have reduced them to common use:—the knowledge of which they obtained from the fusion of minerals at the burning of mount Ida. From this event the Curetes and Corybantes, who were the same as the Idæi Daéyli, are supposed to have learned the mystery of fusing and forging metals. From thence it was propagated to many countries westward, particularly to the Pangea mountains, and the region Curetes, where the Cyclopians dwelt in Thrace; and also to the region Trinacia and Leontina near Mount Ida, which they occupied in Sicily.

After tracing very much in detail the true history and antiquity of the Cyclopians, Mr. Bryant infers from their works, that there was a time when they were held in high estimation. They were demoted from their worship, and their chief deity, among other titles, was named Aecon, and Pyracon. They seem to have been great in many fictitious, but the term Aecon, denoting among the Greeks an anvil, is more limited to one base department, and considered them as so many blacksmiths. And as they resided near Mount Ida, they have made the burning mountain their foros:

"Ferrum extrabebant, vastra Cyclopes in antro,
Drontheque, Stereique, et audaces membris Pyracon."—
Ann. l. viii. v. 521.

Bryant's Analysis of Anc. Mythol. vol. i.

CYCLOPIS INSULA, in Ancient Geography, an island of the Mediterranean sea, upon the coast of Alba Minor, and near the island of Rhodes. Pliny.

CYCLOPS, ROCKS OF, in Geography, three rocks of lava, which are termed islands because they are surrounded by the sea, situated about a stone's throw's distance from the shore of Sicily, on which the village of Trieza stands. These rocks, which are mentioned by Pliny, might once have formed a part of the fides of Mount Etna, and have been separated from them by the sea; or they may have been thrown up out of the water by partial eruptions. Some of these rocks appeared to Spallanzani, who examined them, to consist externally only of prismatic columns, that fall perpendicularly into the sea, in some places one foot long, in others two, and in others more; but other parts of these rocks are only full of irregular figures, which have divided them into pieces, as we see in common lavas. M. Dolomieu found on the surface of these rocks, and even in the middle of their substance, where are small pores and cavities, various and numerous zeolites of great beauty. This ingenious naturalist thinks, that these rocks, after the congelation of the lavas, derived their origin from the waters which filtered through them, and held in solution the particles proper for the production of zeolite. See Spallanzani's Travels, vol. i.

CYCLOPTERUS, in Ichthyology, a genus of branchiopodous fishes, distinguished by having the head oblong; mouth in the anterior part; tongue short and thick; and the jaws becket with a number of small acute teeth; gill membrane four-rayed, the cover of one piece; body short, thick, and delitute of scales; ventral fins united into an oval concavity, and forming an inlusion of adhesion. The species of this genus are of the marine kind, and inhabit worms, insects, and the fry of other fishes; and they are furnished beneath with an oval or roundish organ of adhesion, by means of which they have the power of fastening themselves to the rocks firmly, as to require considerable force to remove them. The species of this genus are not very numerous.

Species.

LUMPS. Body angulated by rows of sharp bony tubercles. Linn. Lumpe angulare. Obtuse. Common lump-fucker, Donov. Brit. Fishes, &c. This fish inhabits the northern seas, and grows to the length of eighteen inches or two feet; the body thick and uncoately formed: its colour variable; the prevailing hue on the upper part of the body is usually blueish, tinged with...
with purple, and rough with innumerable daisy papillos dots; the sides pale, and the belly vivid scarlet; the pectoral fins are orange radiated with red, and the eyes bright red. Specimens sometimes occur of a fine and tender green, glistened with silvery, the back blue, and the sides pale rosy. This variety we have obtained more than once, (vide Donov. Tour South Wales,) and are satisfied it is only a variety of the common form. Dr. Shaw describes it as a distinct species, under the title of psosian sucker. The pyramidal sucker (lumpus pyramidalus) of the latter writer is not a different species, nor even a natural variety, but an example of the common kind capriciously disfigured by art, as is sufficiently demonstrated by the specimen from whence Dr. Shaw’s description was taken. The specimen alluded to was formerly preserved in the Leverian Museum, and is at present included in the London Museum. A third variety is described as having the dorsal fin very long, examples of which we have not seen.

The common lump-sucker is found on the northern coasts of Britain, during spring, in vast numbers, where they become the prey of seals, who lurk beneath the surface of the water. It is easy to distinguish the place where the seals are devouring these or any other unctuous fish, by the smoothness of the water immediately above the spot. Great numbers of these fishes are found on the coasts of Greenland in April and May, when they return to the shores to spawn. The natives call them nippers or cat-fish, and admire them as an article of food, being of a very unctuous nature. In England it is also sometimes eaten, stewed in the manner of carp, or broiled; in which latter case the head and skin are taken off, and the flesh cut into slices.

Minutus. Body naked; snout above the mouth, with three tubercles. Linn.

A species of small size, allied in its general aspect to the former species. The colour is white: the body compressed, with two white unequal bony tubercles on each side. The head is thicker than the body, nearly square, and obtuse in front; the vent placed nearly in the middle of the body, and instead of a dorsal fin, a long and tapering recurve spine. The pectoral fins are yellow; the tail entire and equal; the organ of adhesion oval, with dilated and seven lobate margins. This fish inhabits the Atlantic sea.

Nudus. Body naked; head with a single spine each side on the pectoral part. Linn.

A native of India, and of small size.


This species inhabits the American seas. The head is very large and much broader than the body, depressed and flat beneath; the lips thick, wrinkled, and doubled, with two very soft, feathery caruncles within; the gill-covers large and bony; vent situated near the tail. The general colour reddish.


Inhabits the sea between Kamtschatka and America. Its length is about twelve inches; the belly covered, with a thick slimy luid mucus; back flatish, with the tail suddenly tapering behind the vent.

Gelatinosus. Body gelatinous, and sub-transparent; pectoral fins very broad. Pallas.

Found in the eastern parts of the same seas as the preceding. This fish is about eighteen inches in length; the body very slender, oblong, compressed, thicker towards the head, and gradually tapering towards the tail, of a whitish colour tinged with rosy; the skin smooth and very soft, and when just caught is said to tremble like jelly. The flesh is not edible, being refused even by the Kamtschatkan dogs, which are fed during part of the year with fish of various kinds.

Liparis. Body naked; dorsal, anal, and caudal fin united.

A general inhabitant of the northern seas, and sometimes found on the coasts of Britain. The length is from five to sixteen inches; its shape thick towards the head, and becoming attenuated and compressed towards the tail. Donov. Brit. Fishes.


A beautiful species, in its general aspect much resembling the last. Lepechin found it in the White Sea, and described it in the Transactions of the Petersburg academy. This rare fish has also once been met with on the British coasts. It is described in Donovan's Hist. Brit. Fishes; and the specimen itself, from which the figure and account are taken, is arranged with the other British cyclopteri in the London Museum.


Length four or five inches; a very local species found on the coast of Scotland, and on those of Cornwall and Devonshire in Britain; and in some others of the European seas.


A small species, found on the coast of Devonshire.


A new and very beautiful species of a small size, discovered lately on the coast of Devonshire.

Cydara, in Ancient Geography, a river placed by Pliny in the northern part of the island of Taprobana.

Cydarus, a stream of Thrace, in the vicinity of Constantinople.

Cydeuses, a people of Asia, placed by Ptolemy on the confines of Ethiopis.

Cyder, in Rural Economy, is a fruit liquor prepared by means of fermentation, from the expressed juice of different sorts of apples. The process by which this liquor is formed has much similarity in all the different districts where it constitutes an object of the farmer, though there is much diversity in regard to the care and management which are bestowed upon it.

The varieties of apples which are grown and cultivated in the various fruit districts of the kingdom, with this intention, are extremely numerous; but by some it is supposed that all such as have a yellow or light red ground, are tinged with red streaks on the skin side, having a smart acid flavour, with a firm juicy parenchyma and an aromatic flavour, whatever the name may be, are unquestionably proper for cider. It has, however, been remarked by Mr. Knight, that the properties which are essential for cyder and the table are rarely met with in the same fruit. That degree of firmness which is necessary in the eating apple, is useless in the cider fruit; and colour, which is disfigured in the former, is amongst the most important qualities of the latter. Some degree of straining, which is prejudicial in the eating fruit,
fruit, is conceived beneficial in that made use of for cyder. In Devonshire, according to Mr. Vancouver's Survey, a rich sweet fruit is generally preferred for the purpose of cyder, while in others those which have more altrigeneity are held in the highest estimation. See Apple, Apple

Tree and Orchard.

Gathering the Fruit.—In the busines of gathering the fruit for this liquor, much care should be taken that it be sufficiently ripe before it is removed from the trees, otherwise the cyder will be harsh, rough, and unpleasant in its taste, in spite of anything that can be done in the processes of making it. The most certain indications of ripeness, according to Mr. Crocker, are the fragrance of the smell, and the dropping of the apples from the trees in a spontaneous manner.

The most early ripe fruits should, of course, be first gathered, but as on the same trees the fruits rarely become equally ripe at the same period of time, it is found necessary to throw them together into large round heaps in the open air, as noticed below, in which state they are suffered to continue for some time, until a sort of sweating or fermentation has been brought on, which induces a similar state of mellowness and fitness for grinding in the whole heap. This method, however, which requires much judgment in directing it, does not, even under the most careful management, always answer the purpose; therefore the nearer the apples approach towards perfect ripeness the better, as their juice is the more rich.

Mr. Crocker advises that in a dry day, when the fruit has acquired such a state of maturity as to be ready to drop from the tree, that the limbs or branches of it should be slightly shaken, and disburthened in a partial manner of its apples, thus taking only such as are in a ripe state, leaving the others to acquire a due degree of maturity. It is indeed suggested as proper to make three gatherings of the crop, keeping each of them by itself.

The latter gatherings, as well as the wind-falls, can, however, only be employed in making inferior cyder: the prime cyder must be drawn from the first gatherings which have been made.

According to Mr. Knight, the merit of cyder will always depend much on the proper mixture, or rather on the proper separation of the fruits. Those whole rinds and pulp are tinged with green, or red without any mixture of yellow, as that colour will disappear in the first stages of fermentation, should be carefully kept apart from such as are yellow, or yellow intermixed with red. The latter kinds, which should remain on the trees till ripe enough to fall without being much shaken, are alone capable of making fine cyder. Each kind should be collected separately, as noticed above, and kept till it becomes perfectly mellow. For this purpose, in the common practice of the country, they are, as flanked above, placed in heaps of ten inches or a foot thick, and exposed to the sun and air, and rain; not being overcovered except in very severe frosts. The strength and flavour of the future liquor are however, he says, increased, by keeping the fruit under cover some time before it is ground; but unless a situation can be afforded it, in which it is exposed to a free current of air, and where it can be spread very thin, it is apt to contract an unpleasing smell, which will much affect the cyder produced from it. Few farms are provided with proper buildings for this purpose on a large scale, and the improvement of the liquor will not nearly pay the expense of erecting them. It may reasonably be supposed that much water is absorbed by the fruit in a rainy season; but the quantity of juice yielded by any given quantity of fruit will be found to diminish as it becomes more mellow; even in very wet weather, provided it be ground when thoroughly dry. The advantages therefore, of covering the fruit, will probably be much less than may at first sight be expected. No criterion appears, the writer says, to be known, by which the most proper point of maturity in the fruit can be ascertained with accuracy: but he has good reason to believe that it improves as long as it continues to acquire a deeper shade of yellow.

Each heap should be examined prior to its being ground, and any decayed or green fruit carefully taken away. The expense of this will, he observes, be very small, and will be amply repaid by the excellence of the liquor, and the care with which too great a degree of fermentation may be prevented in the processes of making it into cyder.

Mr. Crocker has likewise remarked that the cider-drift, which would be particularly curious in his prime liquor, should hand-gather his fruit, and keep the forts firstrate fow from another: but as this would be troublesome, expensive, and in a full season wholly impracticable, the general crop may, at different times, be shaken down, and collected from the ground. Fruit of equal ripeness, and whose qualities are nearly alike, should be heaped together, to moderate their juices, or, in other words, to perfect the saccharine fermentation. How this is best done, cyder-makers are not the writer says, agreed: some, says he, judging it altogether unnecessary to keep them at all, if sufficient time be allowed for perfecting the saccharine fermentation on the tree: some considering it best to sweat them in close lofts, whilst others allege, that the open air is the only place where they ought to be heaped. Experience, however, should, he thinks, teach us that mellow apples require time for their being mellowed, to attain their highest flavour; and, until this mellowing be perfected, their juices are not in the best state possible for being converted into cyder-liquor.

However, philosophy has shown, he thinks, that fermentation is never improved by halting the operation with too much heat: nor perfected in due time under too great an exposure to cold. It would be well, therefore, says he, if apples, when gathered from the tree, were placed in open sheds, having boarded floors, in heaps or layers of ten or twelve inches deep; the hard and harsh fruits might probably, he supposes, be laid in heaps of greater depth; the forts to be kept separate, as much as the nature and conveniences of the sheds will allow: at any rate there must be a mixture of apples in the same heap; let them, says the writer, be such as are of qualities nearly alike, and which are of equal ripeness at the time of gathering, but on no account should sweet and sour fruit be heaped together. To some ciderists it may, says he, have appeared unnecessary to keep the different sorts of apples separate, but it is of importance to do so; and the trouble is very slight, as has been observed, compared to the advantages which will hereafter result from a regular fermentation of the juices.

The impurity of housing and lying apples in very large heaps mudd, the writer thinks, be manifest to every thinking mind; more especially when in the same room are found all sorts; sweet, sour, harsh, generous, ripe, and unripe, thrown promiscuously together; where some are rotten before others are mellowed. And what mudd the liquor be, he asks, which is expressed from such an heterogeneous mass?

In respect to heaping, the author of the Survey of Gloucclthshire well remarks, that though it may improve unripe fruit, it cannot communicate the richneds found in that which is fully ripened. And that the effect which is thus produced on those which are heaped in a very green and
and unripe flake, is rotenness, in which condition very few are capable of communicating an unpleasant flavour, even to a very large quantity of the liquor, especially where they have become of a black appearance.

Supposing, says Mr. Crocker, that the fruit, which is of different sorts and qualities, has been kept separate from one another a few weeks, it will be perceived that some of the prime sorts are in a proper state of maturity; that the pulp has acquired its highest degree of richness; the kernels assumed their brownest colour; the rind still free from any appearance of rotenness; and that they readily yield to the pressure of the thumb; then is the time, says he, and such is the fruit to be employed in making prime cyder: every necessary utensil must now be set in order, the mill, press, tubs, calks, pads, and bowls, clean washed, and suffered to dry before they are employed in the business.

The able writer of the Agricultural Report of the County of Gloucester very strongly and very justly reprobates the too common practice of those who indiscriminately, and without any regard to the maturity of the fruit, “run over the whole orchard with the beating pole, or ‘long’ and bring down every apple within their reach,” as thus beating the trees before the fruit is nearly ripe is not only injurious in respect to the cyder, but injurious to the succeeding year’s crop of fruit; the bearing buds for the next fruit being formed early in the summer; and even attached to the growing fruits. Of course, the beating of the trees, unless the apples separate with facility, must of necessity bring off the buds which nature had provided for the ensuing year, with them. And he adds that, “after an operation of this kind the ground is froid with these buds, to an extent scarcely to be conceived by those who have not witnessed it.” The practice of the most careful farmer is, therefore, he says, to have the trees “shaken by limb, by a person up in the tree,” only suffering the few that remain to be beaten off, and occasionally even allowing them more time to ripen, which he considers by far the best practice, except that of suffering them to fall of their own accord, as securing a regular fermentation with less keeping.

Grinding the Apples. In the business of grinding the fruit for this use, i.e. to what is termed pomara, several different methods are employed; but those most commonly in use are the bruising-bone, with a circular trough, and the apple-mill. In the first of these methods the apples are thrown into the trough, and bruised by the motion of the stone, as it is moved round by a horse, in the usual way that tanners grind their bark. This is a very ancient method, and which is still in use in some parts of Devonshire, and although it has its inconveniences; in bruising feme apples too much and some too little, it is not without its advantages in these parts of the country; the inhabitants of which allege, that it bruises the kernels of the fruit better than other machines. Although it must be admitted, that the kernels poles an agreeable aromatic bitter, yet it has been held questionable if they impart any perceivable beneficial quality to the cyder. Be this as it may, certain it is, that this method of converting apples to pomara, by the trough and stone has, in the last fifty years, much given way to the apple-mill.

The author of the treatise on the apple and the pear has remarked that when iron mills have been tried, this metal has been found to be soluble in the acid of apples, to which it communicates a brown colour and an unpleasant taste. No combination has, he believes, been attempted to take place between this acid and lead; but as the oxyd or calx of this metal readily dissolves in, and communicates an extremely pungent quality to, the acetic juice of the apple, it would, he thinks, never be suffered to come into contact with the fruit or liquor. In the construction of these mills, there are various methods that have recourse to in regard to their motion or moving powers, some being worked by hand, some by horses, and others by water. The horse and water powers have obviously considerably the advantage in the quantity of work that is capable of being performed; but the hand method is supposed capable of reducing the pulp into a state of greater fineness, where the latest improvements in mills of this kind have been adopted. See CYDE R-MILL.

It has been suggested in the Herefordshire report, that each sort of apples should be ground separately, or at least such sorts in mixture as become ripe at the same time; but on the authority of Mr. Appleye of Withington and other manufacturers, it is stated, that the former practice is that by which “fine cyder of different flavours and degrees of strength is obtained, from the same orchard, the liquors being mixed after they are made.” It is however allowed that “in all common cafes,” the practice of grinding different varieties of fruit equally ripe, together, is found eligible; as it is left difficult to find the requisite degrees of strength, and of quality, in three varieties, than in one. And hence it is supposed that cyders made from the juice of mixed fruits under common management, generally succeed with greater certainty, than those from only one kind. In the grinding, the fruit should be reduced as nearly as possible to a uniform consistence, in such a manner that the rinds and kernels may be fearlessly separable from the general mass; the operation proceeding slowly, with a free access of air. The quantity of fruit which is usefully thrown into the citron at one time to be ground, is about two bushels in the large mills.

Pressing the ground fruit. — It is remarked by Mr. Crocker, that ciderists are not agreed in opinion, whether the pommage should immediately after grinding be conveyed to the press, there to be formed into a kind of cake, or what is sometimes called the cheesy; or whether it should remain some time in that flake before pressing. It is impossible to determine this point; but if it should be allowed to remain water immediately after grinding; others conceive it best to suffer it to remain in the grinding trough, or in vats employed for the purpose, for twenty-four hours, or even two days, that it may acquire not only a redness of colour, but also that it may form an extract with the rind and kernels. Both extremes are, he thinks, wrong. There is an analogy, he supposes, between the making of cyder from apples, and wine from grapes; and the method which the wine-maker pursues ought, he thinks, to be followed by the cider-maker.

When the pulp of the grape has lain some time in the vats, the vintager taps his hand into it and takes some from the middle of the mass; and when he perceives by the smell that the juice of the grapes is gone off, and that his rife is affected with a slight figiancy, he immediately carries it to the press, and by a light prebire expresse his prime juice. In like manner should the ciderist determine the time when his pulp should be carried to the press. If he carry it immediately from the mill to the press, he might lose some small advantage; which may be expected from the rind and kernels, and his liquor may be of lower colour than he might wish. If he suffer it to remain too long unpressed, he will find to his cost, that the acetic fermentation will come on before the viscus is perfected; especially in the early part of the cider-making season. He will generally find, he thinks, that his pulp is in a fit state for pressing in about twelve or sixteen hours. If
CYDER.

he must, of necessity, keep it in that state longer, he will find a fermentable heat therein, which will engender a premature fermentation; and he must not delay turning it over, whereby to expose the middle of the mass to the influence of the atmosphere. Mr. Knight, however, thinks it should remain twenty-four hours before it is taken to the press. And the writer of the "General view of the state of agriculture in the county of Gloucester," states that there the pulp is either immediately carried to the press, or, which is better, laid up in tubs or open casks for twenty-four hours; by which the colour is improved, and by the digestion which takes place, a more intimate union of the rind, kernels, and flalk juices are produced, especially when again carried to the mill and re-ground, as the Cyder-Press.

The ground fruit or pommace being now in a proper state, it is carried to the press, and a square cake or cheese made of it, by placing, very clean sweet straw or reed between the various layers of pulp or pommace, or by putting the same into hair-cloths fastened upon the vats, and placing them one on another. They are turned up on the sides and corners over the pulp, fo as to nearly meet the centres. They are laid very even, ten or twelve being applied over each other in regular layers, the square mass of the press being raised with them, keeping the pile to a uniform size. Upon the whole, a strong board is placed, wider than the pile, on which the blocks of the press rest. It is of importance that the straw or reed, where they are used, be sweet and perfectly free from any fulness, lest the cider be impregnated therewith. Particular care ought also to be taken to keep the hair-cloths sweet, by frequently washing and drying; or the ill effects of their acidity will be communicated to the cider. To this cake or cheese, after standing a while, a slight pressure is at first to be given by lowering the screw of the press, which must be gradually increased as the cakes become dryer, until all the must or juice is expressed, which is usually completed by the long lever and windlafs; after which, the juice must be strained through a coarse hair sieve, to keep back the grapes feculent of the juice, and be put into proper vessels. These vessels may be either open vats, or close casks; but as in the time of a plentiful crop of apples, a number of open vats may by the cyderist be considered an incumbrance in his cider-room, the must should be generally carried immediately from the press to the cask. The pressed pulp or cheese, as they are termed, on being removed from the press and taken out of the cloths, are thrown away, when not defended for further use; but when the crops are scarcity they are sometimes laid by in some places, to be afterwards reground with water, from which is afforded a liquor of weak quality, which is denominated in some places woldings, but of sufficient strength to render it fit for family use; as notwithstanding the utmost attention is given, and the greatest exertion of the press, some portions of the fruit remain unbruised, which contain juice in an unexpressed state. It is found that the refuse of a quantity of fruit, sufficient for making three hogheads of cyder, is capable of yielding about one hoghead of washings.

Fermenting, racking, and cajoling the liquor.—These are the next operations to be regarded in the manufacture of this liquor. It is suggested by Mr. Crocker, that cyder-making is thus far a mere manual operation, performed with very little skill in the operator; but that now it is that the great art of making good cyder commences: nature soon begins to work a wonderful change in this solid-looking, turbid, fulsome and unwholesome fluid; and, by the processes of fermentation alone, converts it into a wholesome, vivacious, fulminating, heart-cheering beverage. He thinks that philosophy has shown, and that experience justifies the position, that the juices of all vegetables, when exposed to certain degrees of heat and atmospheric influence, are disposed by nature to spontaneous intestine motions of their constituent parts; this is called fermentation.

And it is observed by Mr. Knight, that the juice of the apple in its unfermented state consists of sugar, vegetable mucilage, acid, water, its tingling matter, the principle of colour, and, he believes, of affluence. Of these component parts, the first only is known to be capable of producing ardent spirit, and it might thence be inferred that the strongest cyders would be afforded by the sweetest fruits: but the juice of these generally remains defective in what is termed body in liquors, and it is extremely apt to pass from the saccharine to the acetous state. Much of the strength of cyder is supplied by the Herefordshire farmers to be derived from the rind and kernels of the fruit, and hence arises their great attention to grind it thoroughly; the flunks also are necessarily reduced, when the apples are thoroughly ground, and he suspects that the body of the liquor is strengthened, and its flavour improved by the unctuous juice of these; yet it does not appear probable, he says, that either of them contains any saccharine matter.

It is further stated as well known that there are various species of fermentation in the juices of all vegetables, each of which changes the very nature and quality of the fluid; but the principal ones which are to be particularly attended to, is the influence now under consideration, (the must or juice of apples,) these are the visus, the acetous, and the putrefactive. The first converts the must from its turbid, fulsome state to a transparent spirituous liquor, lightly piquant on the palate, resembling wine both in its flavour and effects.

The above writer states in addition, that it has been observed to take place in such bodies only as contain a considerable portion of sugar, and that it is always attended with the decomposition of that substance. The liquor gradually loses its sweetness, acquiring an intoxicating quality, and by distillation affords a greater or less quantity of ardent spirit, according to the quantity of sugar it originally contained, and the skill with which the process has been conducted. When this fermentation proceeds with too much rapidity, it is often confounded with the acetous, but the products of that are totally different. A violent degree of fermentation however, though purely visous, is extremely injurious to the strength and permanence of cyder, probably owing to a part of the ardent spirit being discharged along with the gaseous air or gas. "If," says the author of the Treatise on Cyder-making, "the juice has been expressed from four apples, this fermentation is perfected in two or three days; but if from sweet apples, not under a week or ten days, and sometimes longer."

The next succeeding stage of fermentation gives an acidity to the vinous liquor before spoken of, converting it to a sort of vinegar. This fermentation begins to take place (frequently in a few hours) after the visous is ended, and if the fermentation be improperly hastened by heat, before the visous can be perfected. And Mr. Knight has remarked that it usually succeeds the visous; but that it will sometimes precede it, when the liquor is in small quantity and exposed a large surface to the air. In this process, vital air is absorbed from the atmosphere, and the ardent spirits, vegetable acid, and sugar, if any remain, are alike converted into vinegar.

It is also further remarked that in the putrefactive process which follows the acetous, the vinegar loses its acidity, because
becomes sour and viscid, and on its air of an offensive smell: an earthy fermenting subfluid, and the remaining liquid is little but water. But although we cannot, Mr. Crocker thinks, form any clear and distinct knowledge of the precise manner in which nature performs these changes in fermenting liquors, yet the effects are evident; and from a consideration of the different natures and results of the various fermentations, it may be perceived, that the first is the only one useful in making good cyder, and that the others tend to vitiate, and render unwholesome a liquor that would otherwise be highly pleasurable, and truly diaphanous. To regulate the first and to check the others, it is, says he, the greatest business of that cider-maker, who would attach to himself the satisfaction and fame which every one is emulous of acquiring and deserving.

In the view of attaining these ends, fermentations should not, he thinks, by too much heat, be carried on rapidly, nor by extreme cold, too slowly; as, in each case, the fermenting body must be injured. Hence (he says) it appears, that a certain degree of warmth; or rather imperceptible heat, conduces best to regulate this operation. This degree of warmth may be underfold to rest between forty and fifty degrees of Fahrenheit's thermometer. If then the warmth of the cellar, in which new-made cyder is placed, be between these points (no adventitious cause intervening), we may expect that the vinous fermentation will commence and go on with due regularity, and in a proper manner.

It has been observed above, that fermentation is an interline motion of the parts of a fermentable body. This motion, in the present case, is always accompanied with an evident ebullition: the bubbles rising to the surface, and there forming a foam; or soft and fleshy crust, over the whole liquor. This crust is frequently raised and broken by the air as it diffuses itself from the liquor, and forces its way through it. This effect continues whilst the fermentation is brisk; but at last gradually ceases. The liquor now appears tolerably clear to the eye, and has a piquant, vinous sharpness upon the tongue. If in this state the keel is put into the fermenting liquor, the room is too warm; and atmospheric air must be let in at the doors and at the windows.

"This (continues he) is the critical moment, which the ciderist must not lose sight of: for, if he would have a strong, generous, and pleasant liquor, all further sensible fermentations must be stopped. This is best done by racking off the pure part into open vessels, which must be placed in a more cool situation for a day or two, after which it may again be barrell’d, and placed in some moderately cool situation for the winter. The Herefordshire cider-farmers, after the cyder has perfected its vinous fermentation, place their casks of cyder in open sheds throughout the winter; and, when in spring advances, give the last racking, and then cellar it. In racking, it is advisable that the flemm from the racking-cock be small, and that the receiving-tub be but a small depth below the cock: lest, by exciting a violent motion of the parts of the liquor, another fermentation be brought up.

Though in common practice the racking of the liquor is rarely much attended to, especially for some months after casing, this being the old method; there cannot, however, be much doubt but that it should be accomplished at the proper moment as flemm above: in proof of which it is found that in the management of the finer liquors, in some districts, in which the fermentation is rapid, some have ferriments in constant attendance, to watch its progress, racking it when necessary, even in the night, as flemm saccharine liquors require timely checking to prevent their taking on the acetoine state.

But though frequent rackings have, without doubt, a tendency to reduce the liquor to a quiet state, the strength is supposed to be considerably lowered by it, in consequence of the continual escape of the spirit by evaporation in the atmosphere. Brandy, or any other clean spirit may likewise be employed for the same purpose as racking, if not found too dear. The same obje may also be obtained in some measure by leaving the cask unfilled, with an ullage. Where the tendency to fermentation is great, the casks should not be too much filled to the bung-hole, the action of the air on the surface of the liquor being favourable to the checking of that process.

The grounds, lees, or feculence of the cyder, after racking, may be strained through filtering bags, made for the purpose, of coarse linen or hempen cloth, and the running is placed among the second-rate cyders; but by no means should it, in Mr. Crocker's opinion, be returned to the prime cyder. Some find it useful in checking any other irregular fermentation in the casks. In this situation the cyder will, in course of time, by a fort of ineffable fermentation, (the farmer says) not only drop the remainder of its gross lees, but will become transparent, highly visous and fragrant.

"But, (it is observed by Mr. Knight,) that after the fermentation has ceased, and the liquor is become clear and bright, it should instantly be drawn off, and not suffered on any account again to mingle with its lees; for these possess much the same properties as yeast, and would inevitably bring on a second fermentation. The best criterion to judge of the proper moment to rack off will be (he says) the brightnes of the liquor; and this is always attended with external marks, which serve as guides to the cider-maker. The discharge of fixed air, which always attends the progress of fermentation, has entirely ceased; and a thick crust, formed of fragments of the reduced pulp, raised by the buoyant air it contains, is collected on the surface. The clear liquor being drawn off into another cask, the lees are put, he fays, into small bags, similar to those used for jelies, being made, as noticed above: through these, whatever liquor the lees contain gradually filtrates, becoming perfectly bright, and is then returned to that in the cask, in which it has the effect, in some measure, of preventing a second fermentation, as already hinted. It appears, he fays, as he has observed, to have undergone a considerable change in the process of filtration. The colour is remarkably deep, its taste harsh and flat, and it has a strong tendency to become acetoine; probably by having given out fixed, and absorb'd vital air. Should it become acetoine, which it will frequently do in forty-eight hours, it must not, on any account, he fays, be put into the cask. If, however, the cyder, after being racked off, remains bright and quiet, nothing more is to be done to it till the succeeding spring; but if a flemm collects on the surface, it must immediately be racked off into another cask; as this would produce bad effects, if suffered to sink. If a disposition to ferment with violence again appears, it will be necessary, he thinks, to rack off from one cask to another, as often as a thickening flemm is heard. The strength of cyder is much reduced, he fays, as noticed above, by being frequently racked off; but this, he supposes, arises only from a large portion of fume or remaining unchanged, which adds to the sweetness, at the expense of the other quality. The juice of the fruits which produce very strong cyders, often remains muddly during the whole winter, and much attention must frequently be paid, to prevent an excess of fermentation.
C Y D E R.

The cider into which the liquor is put, whenever racked off, should always have been thoroughly balled, and dried again; and each should want several gallons of being full, to expose a larger surface to the air of the atmosphere.

But, says he, should the cyder-maker neglect the above precautions, the inevitable consequence will be this: another fermentation will quickly succeed, and convert the fine viinous liquor he was poached of into a sort of vinegar; and all the art he is master of will never restore it to its former richness and purity.

When, however, the acetous fermentation has been suffered to come on, the following attempts may, he says, be made to prevent the ill effects of it from running on their full extent. For this purpose several means have been tried, sometimes with a degree of success, at other times wholly unavailably; the most popular ones would, however, seem to be these: as already noticed, a bottle of French brandy, half a gallon of spirit extracted from the lees of cyder, or a pailful of old cyder, poured into the hoghead soon after the acetous fermentation is begun: but no wonder, continues he, if all these should fail, if the cyder be still continued in a close warm cellar. To give effect to either, it is necessary that the liquor be as much exposed to a cooler air as conveniently may be, and that for a considerable length of time. By such means it is possible fermentation may, in a great measure, be arrested; and if a cask of prime cyder cannot from thence be obtained, a cask of tolerable second-rate kind may. These remedies are innocent; but if the farmer or cyder-merchant attempt to cover the accident, occasioned by negligence or inattention, by applying any preparation of lead, let him reflect that he is about to commit an absolute and unqualified murder on those whose lot it may be to drink his poisonous draught. Such means should, therefore, on no account be ever had recourse to.

The practice which is provincially termed flaming, and which signifies the fuming a cask with burning sulphur, may sometimes be advantageous. It is thus performed: take a stripe of canvas cloth, about twelve inches long and two broad; let it be dipped into melted l-incefine; when this match is dry, let it be lighted, and fupended from the bung of a cask (in which there are a few gallons of cyder) until it be burnt out. The cork must remain fupped for an hour or more, and then rolled and to fro, to incorporate the fumes of the match with the cyder; after which it may be filled. If the flaming be designed only to keep off fuppers from inflaming improper fermentation, the abovementioned measure is sufficiently: but if it be required to give any additional flavour to the cyder, some powdered ginger, cloves, or cinnamon, &c. may be brewed on the match when it is made. The burning of these ingredients with the sulphur will convey somewhat of their fragrance to the whole cask of cyder; but to do it to the best advantage, it must be performed as soon as the vinous fermentation is perfectly perfected.

It is fupped by Mr. Crocker, that when the cyderift has succeeded in obtaining a favourable vinous fermentation, and by a well-timed facking and attention he has prevented the acetous and other succeeding fermentations from rising, his cyder will require very little further attention, more than filling up the vellows every two or three weeks, to supply the waftes by the infuble fermentation, until the beginning of the succeeding March; at which time it may be readily expected he will find his cyder bright, pure, and in a fit fate for its final facking. This should be done in fair weather; and, if necessary, a commixture should now be made of the high-coloured cyder, made from the Jerfey, or the lufious sweet apples, with that of the pale-coloured cyder from the power of four apples: which means a general regular colouring may be obtained with the least trouble, and without expense in any way.

Though it may be expected that the cyderift will now find his liquor to his mind, both in point of brightness and colour, yet should he be disappointed, this is the time for applying some innocent remedy to the disorder.

He does not recommend to him either of the force com-
monly used for thinig liquors, namely, bullock's blood, fishfuls, eggs, &c. as they as frequently spoil a cask of cyder as improve it; but if he put two pounds of lump fugar into a hoghead of cyder, he will receive all the benefit which may be expected from the most nausiouf force which bullfkins can employ. If higher colour in cyder be desired than what his fruit naturally gives under the foregoing management, the cyderift will do well, he says, to melt a pound of lump fugar in a flaxpan, over a clear fire, stirring it frequently, until it comes to a very dark brown colour: then to take it off the fire, and, as it cools, add some cyder thereto by little and little, and continue stirring it until it becomes a thin uniform fluid. This colouring, in the quantity of about a pint, more or less as occasion may require, to a hoghead, is very cheap and wholesome, tinges to perfection, gives no lusious sweetnefs, but rather an agreeable bitterness, and thus recommends itself to the nicer palates. Soon after this spring facking, but not till then, the cafs may be gradually fupped, by first laying the cork on the bung-hole, and in a few days forcing it very tightly into it, covering it over with a layer of melted rosin, or other similar substance.

Botting the Liquor.—This is the next business to be attended to in the management of cyders; and it is fated by the writer just mentioned, that in the month following that which is named above, the cyder, in general, will be in a fit fate for this operation; but that the critical time for this procfs is when the liquor has acquired in the cask its highest degree of perfection: then, when the weather is fair, the barometer high, and the wind in some northerly-point, let the bottles be filled, setting them by uncorked until the morning; then let the corks be driven very tightly into the necks of the bottles, tied down with small string twice or three, and well secured with melted rosin, or other material of the fame nature.

It is fated by Mr. Knight, that cyders which have been made from good fruits, and have been properly madified, will retain a confiderable portion of sweetnefs, in the cask, to the end of three or four years; but that the fuccharine part, on which alone their sweetnefs depends, gradually disappears, probably by a decomposition and discharge of fixed air, similar to that which takes place in the earlier stages of their fermentation. Cyder is generally in the best fate to be put into the bottle at two years old, where it will soon become brilk and sparkling; and if it polished much sweetnefs, it will remain with scarcely any sensible change during twenty or thirty years, or as long as the cork duly performs its office, or refills decay.

But in making cyder for the common ufe of the farm-
house, the fame writer fays, few of the foregoing rules are or ought to be attended to. The flavour of the liquor is here a secondary confideration with the farmer, whole first object must be to obtain a large quantity at a small ex-
 pense. The common practice of the country is sufficiently well calculated to answer this purpose; the apples are usu-
ally gathered and ground as soon as they become no, as
soon as it becomes bright, or more frequently conveyed
from
from the press immediately to the cellar. A violent fermentation soon commences, and continues until nearly the whole of the facecarne part is decomposed. The casks are filled up and stopped early in the succeeding spring, and no further attention is either paid or required. The liquor thus prepared may be kept from two to five or six years in the cask, according to its strength. It is generally harsh and rough, but rarely acceous; and in this state, the writer believes, it is usually supposed to be preferred by the farmers and peasants. When it has become extremely thin and harsh by excess of fermentation, the addition of a small quantity of bruisfed wheat, or slices of toasted bread, or any other farinaceous substance, will, he says, much diminish its disposition to become four. But the above opinion is not, he thinks, well founded; they like it best when it possesses much strength with moderate richnesses, and when it is without anything harsh or four in its flavour; but they will drink it, and to a most extraordinary excess, even when it is really in the acceous state.

And, as has been seen above, an inferior kind of liquor is made, the writer says, by macerating the reduced pulp, from which the cyder has been pressed, in a small quantity of water, and regrinding it. This may be kept till the next autumn, and usually supplies the place of cyder in the farm-house for all purposes, except for the labourers in the harvest. It is generally fit to drink very soon after it is made; and though no attention is paid to it during its fermentation, it often remains, till near the end of the succeeding summer, more palatable than the cyder pressed from the same fruit, which is a fortunate circumstance for the farmer.

In the business of making perry, which is a liquor of a somewhat similar nature, there is but little which is materially different in the process. See Perry.

Produce and application of Cyder.—The produce of this liquor is a matter which is extremely difficult to ascertain, whether the quantity be taken by the acre, or in any other way. It has been stated by the author of the "Prebent State of Husbandry," in this country, that the quantity of cyder and perry made for sale in the fruit districts is very great; but that, that used by the inhabitants is by various accounts much more considerable. These liquors are, he says, sold by the farmers in different places of preparation for market. Sometimes, they are sold immediately from the press, sometimes after the first racking, and frequently, not until ready for use. The price of cyder and perry always advances according as these liquors are in a prepared state for the consumer's use, as well as according to the quantity on hand, and the quality of the fruit whence it was made. Stire cyder and square-pea r perry, for instance, says he, always give much higher prices than what is made from any other fruits of fruit. The price of common cyder liquor from the press, for a course of seven years, may, he thinks, be rated at from 15s. to 30s. the hoghead of 110 gallons; and common perry from 12s. to 15s. Stire-cyder, in the same state, sells for 5l. 10s., and sometimes 12l. the hoghead; and square perry, in ordinary season, from 4l. to 5l. the hoghead.

But the produce of cyder or perry by the acre can only, he says, be gauged at by first ascertaining the number of trees. From an orchard of trees, in full bearing, half a hoghead of cyder may, in season ordinarily, be expected from the fruit of each tree. As the number of trees on the acre varies from ten to forty, the quantity of cyder must vary in the same proportion; that is, from five to twenty hogheads. Pear trees, in equally good bearing, yield fully one-third more liquor; therefore, although the liquor extracted from pears sells at a lower price than that produced from apples, yet the value by the acre, when the number of trees is the same, is nearly on a par.

Mr. Vancouver, in his Survey of the County of Devonshire, has remarked, that the great uncertainty of this sort of crops renders it a matter of great difficulty, to slate any thing like an average produce of that district. He has found, however, that the mean, of several statements taken upon a period of seven years, which varied from two and a half to five hogheads per acre, will be found to equal that of thirty hogsheads and two-fifths for the acre. And that the average price of the liquor at the pound's mouth, or press, was, in 1807, fifty shillings the hoghead.

And the intelligent writer of the Report of the County of Gloucester, has offered a statement of the expense, produce, and profit of this kind of crop, in a different way on the extent of twenty acres.

Supposing the planting of the trees to be sixteent yards, the acre will admit sixteen hogsheads, which, with the original coll, planting, and fencing, may be estimated at 5l. each, or in the whole 4l. 6d. each.

Grafting, protec ting, and keeping up fences till the trees are out of danger, may be flated at 2l. 6d. each.

It is fuggelled, that the return to the landlord will be very small for the first twenty years; and that he will not be able to put an additional rent on his lands, in less than thirty years, for the plantation.

The cost of erecting a cyder-house and mill flated at eighty pounds.

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<tr>
<th>General Estimates</th>
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<td>Planting 20 acres</td>
<td>80 0 0</td>
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<tr>
<td>Grafting, protec ting, &amp;c.</td>
<td>40 0 0</td>
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<td>Interell for 30 years 80l.</td>
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<tr>
<td>Building cyder-house, &amp;c.</td>
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<tr>
<td><strong>Total expense</strong></td>
<td><strong>320 0 0</strong></td>
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<th>Interell of 320l.</th>
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<td>Profit</td>
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<td><strong>Advance of rent on 20 acres</strong></td>
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Consequently the landlord has the distant prospect, he says, of increasing his income 14l. per annum, or of receiving nearly 10 per cent, for money laid out, but subject to the deductions of repairs, &c.

But that, with the tenant the advantages are still less certain. Suppose the ground to be so well planted and grown as to contain sixteen trees capable of affording in a good season sixteen barrels, or 800 gallons of cyder, which is a large average allowance; and suppose the liquor to be sold from the mill at 4l. the gallon, the produce will be 13l. 6s. 8d. per acre, subject to the deductions of 20s. for tythes, 2l. for making, 10s. for gathering; in the whole 3l. 16s. 8d. the remainder, 9l. 16s. 8d. will be clear profit; which, if it occurred every year, it would be considered highly beneficial; but a good crop rarely happens oftener than once in four years, while the damage done to the grafts under the trees is continued, as well as the increased parochial rates from the increased rent; it does not from, therefore, the writer says, that the additional rent on account of the trees, is returned with much intertoll.

Though there are many individuals in the cyder districts who evince much care and attention in the management of their
their orchard-grounds, trees, fruit, liquor, &c.: Yet this is by no means, he says, the common case; on the contrary, such general negligence prevails, and to imperfect are the modes in which this branch of husbandry is for the most part conducted, that many are of opinion, so much valuable land being occupied as orchards, is, in a national view, extremely unprofitable; and that owing to the same causes, want of attention, and adopting improper modes of management, the farmers at large are also imposed, rather than benefited. While, says he, orchards continue to be considered as secondary objects only of the farmer's attention, as is the cafe at present, it can hardly be expected that the produce will be abundant, or the quality such as to recommend it to more general notice. In place, however, of condemning orchard husbandry at large, it appears much more correct, he thinks, to recommend a general reform in the management; whereby liquors, that are both wholesome and agreeable, when well made, may be introduced into more general use, and to large an importation of foreign vinous liquors be rendered unnecessary. In place of planting only ten or a dozen of trees on the acre over an extensive tract of land, it would, he supposes, be more for the interest, and certainly much more convenient for the cyder-farmers, to lay off a few acres adjoining their places of residence, for the sole purpose of growing fruit-trees. The loss and inconvenience of having fruit trees scattered over an arable field, are considerable. When the trees are full grown, they overshadow, and consequently greatly injure the crop below; the roots also spread a great distance, and besides impeding the ploughing of the ground, extract a great share of the nourishment that would otherwise go to support the crop of corn. The additional expense in gathering and carrying home a crop of fruit from an extensive fruit-ground, beyond what is incurred when four trees stand on the same space of ground which is the other case is occupied by one, also merits attention. Inconveniences as great and numerous result from having fruit-trees thinly scattered over a pasture field. The grubs under the shadow of the trees is very inferior to that in the open part of the field. The cattle must, says he, be excluded when the fruit-trees begin to ripen, especially during and immediately after high winds, otherwise they would eat the fruit. The falling of leaves in autumn is very destructive to pastures of all descriptions; and the same additional expense and trouble of gathering and carrying home the crop are also incurred. For these reasons, a close planted cyder-orchard must, he thinks, be preferable to fields; and where the soil and situation are proper, the grounds stocked with full-bearing trees of the best sorts; and when the trees, the fruit, and the liquor, are judiciously managed, it is impossible but, according to the produce and prices above-mentioned, such grounds must turn out profitable, even supposing they produce but one crop equal to that above-mentioned, every third year. On the other hand, if the slovenly manner of conducting the various operations of cyder-making be perfused in, it would be of the expense of the nation, and of the individuals concerned in that branch of husbandry, he supposes, that there were not a cyder-orchard in the island. Perhaps, on another account also, it might be for the interest of the farmers in the fruit districts that orchards were abolished: the quantity of cyder annually used by the servants and labourers is so immense, that considering the injury which the crops of grain and grass sustain from the sand's being incumbered with trees, the labour of collecting and carting home the fruit, and the trouble attending the manufacturing it into liquors, this beverage must be a more serious article of expense than the generality of cyder farmers are disposed to allow.

It is, however, rated by Mr. Rudge, that where the management of these sorts of liquors is perfectly known and attended to, and there is a capital sufficient to prevent the necessity of immediate sale, as well as plenty of calves in the farmer's own cellar, he may be enabled to take the advantage of the most favourable circumstances of bringing it to the market, as when there is a scarcity from early facles, and no supplies expected from crops of succeeding years; when the price is frequently increased to 8d. or 1½, the gallon.

It is added, that old cyder is always valuable, and pays for keeping; which is suggested as the best means of countervailing the uncertainty of crops, though it often benefits the dealer than the grower of the fruit.

The same able writer also states, that farmers who live contiguous to canals or navigable rivers, have peculiar advantages from their situations, often turning long keeping fruits to a better account than grinding them for cyder, by fending them into the interior districts of the kingdom for the purpose of the table, at the price of 1½. per dozen; for, says he, 'supposing that eleven tons of nine pecks each, are required for 300 gallons, the cyder should be sold at 8½. 15½.; to that even supposing all the cyder to turn out well, the farmer method is far the more advantageous. It is therefore conceived, that in this way alone, the profits of fruit estate can be satisfactorily made out in favour of the tenant of it. See Orchard, and Apple-tree.

Cyder-Casks. In Rural Economy, a vessel of the barrel kind, made of oak for the purpose of keeping the liquor. They are of various sizes or dimensions, according to the extent of the fruit grounds, and the fancy and circumstances of the farmer, in so far as capital is concerned. It is, however, commonly supposing that the strength of the liquor is better preserved, if not inclosed, by a large quantity or body of it being kept together. Though casks of this sort are made to hold from 400 to 500 gallons, the most general size is 110 gallons, which is alone employed in fending out the cyder for sale. The usual price of this kind of casks is about five-pence the gallon.

It is observed that the choice 6½ proper vellies for keeping the liquor in after it has been fermented, is a very material point to be regarded, as none is so liable as this to take the tare or twang of the cask: new vellies, though the wood be ever so well seasoned, are apt to give a disagreeable relish to all liquors, and remarkably so to cyder, unless due caution be used beforehand. Frequent fending with hot water, into which some handfuls of salt have been frill thrown, or with water in which some of the pom-mage has been boiled, and washing afterwards with cyder, are the usual remedies against this evil, and seldom fail of removing it effectually. Of all sorts of old casks, beer vellies are the worst, as they always spoil cyder, and in return cyder casks infallibly spoil beer. Wine and brandy casks do very well, provided the tars adhering to their sides be carefully scraped off, and they are well fended. These different circumstances should always be carefully attended to, in cleaning and preparing casks of this kind for the reception of the liquor.

Cyder-Glafs, are thin cloths as are manufactured for the purpose of the cyder-maker, being made ufe of for containing
containing the pommage, in order to its undergoing the operation of the press. They are usually formed of common hair-cloth, but which is of the more close and compact nature or texture.

The size is generally about four feet square; and they hold about two or three buffels, or as much as the mill can grind at once; and these are, as has been seen, heaped over each other until the press is full, being kept to an uniform size by a wooden frame or gauge. The larger presses are capable of holding from eight to fifteen bags or cloths, which yield from one to two hundred gallons of liquor, according to the largeness of what is termed the ekefe.

To perform the work neatly, it is necessary to have two sets of these cloths or bags, as they are apt to clog and fur in prefling, and consequently become unfit for use again till they have been washed and dried; so that while this is doing, either the press must stand full, or another be ready to employ it. But, none, instead of cloths or hair-bags, lay dry straw under the pommage, the ends of which they turn up over it; then cover the pommage entirely with fresh clean sweet-smelling straw, upon which they spread another layer of pommage; and so on alternately, until the press is full. Either of the methods will answer the purpose: but those who are desirous of doing the work in the neatest and best manner, generally use hair bags or cloths in performing the bufinefs. See Cyder.

Cyder-Kran, an inferior sort of fruit liquor, which is made after the better kind has been prepared, in the manner which has been noticed in speaking of cyder. (See Cyder.) It is mostly used for domestic purposes.

Cyder-Mill is that sort of machine or contrivance, which is constructed for the purpose of crushing, grinding, and reducing apples, or other similar fruits, into the state of a fine pulp or pommage, in order that the juice or liquor may be drawn from it, by means of presses.

In different districts there are variations in the manner of constructing these mills; but they chiefly consist of two kinds, the horse and the hand mills; the former being principally in use where the extent of fruit ground is considerable, but the latter mostly where the farms of this kind are small, and insufficient to repay the expense of such large machinery.

The first sort, or horse-mill, is that by which the most generally met with, is commonly constructed somewhat on the same principles as those in use for the purpose of grinding bark for the tanners; and consists of the following distinct parts, namely, the cillen-chase, or trough, the runner or bruining-rome, and the cog-wheel and upright axle-tree, with the firter, the reveer, and the shoval employed in the process.

It is stated by Mr. Rudge, in his “Agricultural Survey of Gloucestershire,” that the cillen is circular, and formed of stone, being hollowed out in such a manner as to fit and receive the runner, commonly to the depth of about nine inches. On the inner side, or that which is next, what is usually termed the “nut” or central space, it is cut out in a perpendicular form, but on the exterior or outside somewhat in a sloping direction, being left wider across at the top than at the bottom; and the outside upper edge is left two or three inches in width, in order to receive what is denominated a “curbing,” which is made of wood, and raises it four inches higher, being pinned with nearly a sharp edge. The design of this wood-work is not merely to prevent the pulp or pommage from being carried over, as the stone rolls or turns round, but likewise to correspond with a four-inch plank or planks, which cover the nut, or circular vacant space in the centre. It is usual for the cillen to be delivered from the quarries in three or four separate parts, which are afterwards fixed and cramped together by the millwright. A cillen of thirty feet in circumference will be requisite for a mill of the ordinary size; and the price is regulated by the number of gallons which it is capable of containing, or at the rate of one guinea the foot in diameter.

In regard to the runner or bruining-rome, it is seldom less than three feet and a half, or more than four feet in diameter, being made perfectly flat on the side next the nut, but a little convex on the other, nearly fitting the bottom of the cillen. In the middle, a strong axle of wood is fastened through it, which is connected with an upright or flared axe-tree in the centre, which extends sufficiently far from the exterior side of the runner to connect by means of an iron rod with a wooden bar, which is also linked to the upright axe, and to which the horse is fastened. This wooden bar or pole is so fixed as to be before the runner, and keep the horie clear of it. The height is regulated by a substructure of stone work under the cillen or chafe.

To the horizontal axe is fitted a cog-wheel of from eighteen inches to two feet in diameter, which runs on the wood-work that covers the whole space; from the interior edge of the cillen to the perpendicular axle, and which is denominated the nut. The exact height of this wheel must consequently be determined by that of the centre of the runner above the nut. The cog of this wheel catch upon upright teeth, fixed in the nut, as it rolls upon the surface, and by this means forces the stone into a rotary motion, which under other circumstances it would not always keep; as when the apples are first introduced, or when the bottom of the cillen has become smooth from the pulp, it might slide along rather than roll, was it not for some machinery of this nature; though stone mills are without it notwithstanding.

The perpendicular axe-tree has an iron pin at each end as pivots, which runs in a solid iron centre; the wood of the axe, which is bound with an iron ring or hoop, forming the shoulder of it.

The runner, or stone for grinding, is commonly sold at the quarry at the rate of one guinea the foot, or as many guineas as the stone measures feet in diameter; being, in the district mentioned above, procured from the forest of Dean. They are a sort of dark reddish kind of grit stone, not calcareous, but of sufficient hardness.

It is suggested by Mr. Marshall that much depends upon the quality of the stone. It should not be calcareous, either in the whole or any part, as the acid of the liquor would, in that case, corrode and decompose it. Some of the stones in Herefordshire have, he says, calcareous pebbles in them, which being dissolved, as above, of course leave holes in them. Nor should the stone be of such a kind as to communicate a disagreeable tinge to the liquor.

The same writer remarks likewise that there are some mills of this kind which have two runners, one opposite the other. And he thinks that the situation of these mills should be such as to have a horse-path, of about three feet in width, between the bed and the walls; consequently, a moderate sized mill, with its horse-path, takes up a space of fourteen or fifteen feet in every direction.

At Fig. 1, in Plate XI. on Agriculture, an improved mill of this fort is represented, in which A is the runner or stone, B C D the cillen-chafe or trough, in which the stone
flour moves and reduces the apples: E F G the horse-path; and H I the manner in which the moving power is attached.

The other appendages of the cyder-mill noticed above may be thus described:

The flour consists of a strong round flick, with which the fruit is carefully kept to the stone, and removed from the sides to the bottom, during the process of grinding; for which purpose, a woman or boy usually walks either before or behind the horse. Some horse-mills have two fliers, so attached to the axle-tree of the runner as to execute the work effectually without manual assistance.

The preacher is a small piece of board securely fastened to a wooden handle, and so formed as to fit the shape of the ciphens; by means of which, when the pomage or pulp is sufficiently ground, it is drawn together in order to be conveyed to the press by the flovel.

The flovel is a tool somewhat of the spade kind, mostly made of wood, being a sort of scoop, by which the above operation is readily performed. Iron floves are, however, sometimes made use of; but a portion of the iron is supposed to be dissolved by the acid of the liquor, which may possibly contribute to the black tinge frequently noticed in cyder, after exposure to the air. Wooden implements should therefore, of course, be preferred, as being more cleanly, and, at the same time, free from this sort of danger.

The second fort, or hand cyder-mill, is constituted of two toothed or indented wood en cylinders of about nine inches in diameter, each being inclosed in the manner of other mils, having a feeder at the top, and being made so as to be turned by the hand. By this sort of mill, the work of bruising the rind, kernel, and stalk, as well as that of reducing the flaky parts to a perfect pulp, is well performed.

From the circumstance of the cylinders being so arranged as to be capable of being removed to a greater or less distance from each other, the buffers advances in a regular progressive manner, from the first cutting of the fruit until the cylinders are brought so close together that a kernel cannot pass without being bruised; and where another pair of finer toothed cylinders are had recourse to, to work under these, so as to bring the pulp into a perfect fluid of fineses, the buffers is still more effectually executed. But though by this means much time is saved, more strength is required in the operation. It is with difficulty that the same degree of fineses can be effected by the horse-mill, as in spite of the incessant attention of the labourer who has the care of flaring the fruit while under the operation of grinding, and of keeping it to the runner, a large portion is conveyed to the press without having been fully reduced. A mill of this description is shown at fig. 2. in the same plate.

It is observed by the intelligent author of the Report noticed above, that "two disadvantages attach to the hand-mill in its present state, lots of time and Tncreased manual labour." It is difficult, with the assistance of three men, to grind a hoghead in a day; while with a horse-mill, from two to three hogheads can be made by a man and woman, or younger person, and one horse; consequently, its expediency on a large farm is conceived to be decided. It is, however, added, that the hand-mill is capable of being greatly improved in the point of expedition, by the attachment of a large horizontal wheel and horse, as has been done in some manufactories.

It has been remarked by the author of the Rural Economy of Gloucestershire, that from observing the great simplicity and high degree of perfection with which the fugar mills grind the censes or rather press out their juice between two plain iron rollers, the imperfections of cyder-mills appear more striking. It is however noticed that the sugar cane is a long fibrous body; and readily passes through between the rollers: whereas fruit being globular, and of a cellular substanace, is not easily laid hold of, or, if caught, has no lengthened fibres to induce it to pass, like the cane, between plain iron rollers. It has, however, been found, that between fluted rollers it may be made to pass; and in consequence, these rollers are in use, though not common. They are of call iron, hollow, about nine inches in diameter, with flutes or teeth, about an inch wide, and nearly as much deep. In general they are worked by hand, two men working against each other. Between these the fruit passes twice: the rollers being first set wide, to break it into fragments, and afterwards closer, to reduce the fragments. But even this is not, he says, a perfect engine: in the residuum from the press many kernels are found. Besides, the acid of the fruit is liable to corrode the iron, and this, in return, to tinge the liquor, though neither of these inconveniences is acknowledged. In a country, however, where stone is not easily to be had, this may, perhaps, be found the most eligible cyder-mill. But in this district, where stone is sufficiently plentiful, the flome runner and trough seem to be the most eligible mill at present known: though it appears to him highly probable, that, with attention and perseverance, a more perfect machine might be invented. Be this, says the writer, as it may, the pressent mill appears to be capable of improvement. It is at present an unfinished machine: he means when it is first turned out of the workman's hands: time and conlant wear do that, in part at last, which the workman leaves undone. The acting parts of the machine, those which are to bruise the rind, and crush the kernels, are the face of the roller and the bottom of the trough. But instead of being adapted to each other, in such a manner as to effect their purposes with a degree of certainty, they are left in such rough unfinished state as in a great measure prevents them, during the first fifty years at least, from performing that which is their principal intention. Instead of being worked over, and fitted nicely to each other, with the square and chisell, they are left, as it were, with the stone-mason's peak only, leaving holes and protuberances which would have even horse-beans from the pressure, much more the kernels of fruit. A reason which has been seen two and twenty years has often led him to make such modifications as would lodge half a dozen kernels with safety. To account for this absurdity seems, he says, impossible: perhaps the roughness was intended to prevent the runner from fling; but the use of the cogged wheels has superseded this intention. Perhaps it was left to gather up the fruits with greater effect; but purely, deeply chiselled marks, left in the form of flutes across the face, would have answered this purpose better, and would perhaps have laid hold of and fixed the kernels, so as to serve their being effectually broken, preferable to any other equally simple expedient. Or, perhaps, the cullion was established when the uses of the rind and kernel were not known, and time has not yet corrected the error. He has been told, that the roughness is left to cut the fruit the better on its being first put into the trough, and that on this ingenious principle, stone will pick their runners over as often as they wear smooth. To such cyder-makers he would recommend the hopmalt mill, which would come much cheaper, rid work fuller, and save the expense of pecking. Be the origin of folly what it may, says he, it is painful to observe its effect. In this case, however, the folly, and, of course, its effect may be easily removed. Having made the face of the roller as true as the square
and the chisel can render it, work, says he, the bottom of the trough to it, until not a multhead can escape them. The kernels of fruit are hard, slippery, and singularly difficult to fix, escaping preasure in a peculiar manner; and with angularly altered.

It is remarked in addition, that another improvement of the common cider-mill appears to be much wanted; namely, a method of preventing the materials in the last stage of grinding from rising before the runner; and further, a more mechanical way of raising up and adjusting them in the chase. Until these improvements be made, cider-mills, says he, must remain, what most of them evidently are present, imperfect machines.

It has been noticed by the same writer, that a mill-house, on an orchard farm, is as necessary as a barn on that of other kinds. It is in general found to be one end of an out-building, or frequently an open shed, under which straw or small implements are laid up when not in use. The smallest dimensions possible to render it in any degree convenient and useful are, he thinks, twenty-four feet by twenty-four, having a floor thrown over it at the height of seven feet four, and a cellar in the middle of the house, with a window opposite; the mill being fixed up on one side of it, and the press on the other; as much room as is possible being left towards the door, in the front part, for the reception of fruit and the different necessary utensils.

Mr. Rudge considers the "arrangement of the buildings for the convenience of making and storing fruit liquors as a matter of great importance," though it seems to have been but little attended to on old farms. The mill and press being often found in an isolated building at a distance from the cellars; which occasions the employing of a man and boy, with a horse and dray to convey the liquor to the place where it is to be casked, which is a labour that would be unnecessary were the mill-house and cellars attached. In some of the more recent erections of this description, the front of the vat is so contrived as to discharge the liquor through an opening in the wall, into a receiver in the cellar, from which it is distributed with facility to the different casks which are to be filled.

The roll of the utensils belonging to a mill-house are few: the fruit being simply brought in casks or large barrels, and the liquor carried out in pails, or by means of spouts as noticed above. The hair-cloths, mentioned above, are the principal addition to the mill and press. The expense of fitting up a cider-mill house depends, Mr. Marshall says, on the fitness and quality of the mill and press. One of a moderate size, for a farm, may be furnished completely for from twenty to twenty-five pounds. One on a small scale might be furnished for from ten to fifteen pounds: much depending on the distance of carriage of the stone. This expense is usually borne by the landlord. A mill-house sufficiently fitted up will last many years. He has observed a mill and press which, by the date upon them, have been let up more that twenty years, yet they appeared almost as fresh as new. Many of the old mills and presses, which are seen, may, compared with those, seem to be a century old; or the mills move particularly a greater age, and were probably the original mills of the farms they are upon.

These observations show that considerable attention should be bestowed by the fruit farmer in fitting up and completing his buildings and machinery for the management of this sort of liquor.

C Y D E R. Pref. A machine of the press kind, contrived for the purpose of forcing the juice from different sorts of fruits after their indigestion has been reduced to the state of pulp by means of grinding. They are mostly constructed on the same principles as those of other kinds which are intended to afford a strong or powerful pressure, as the packing and oil-press.

It is constituted, according to Mr. Rudge, of the following parts; a cistern, vat, press, or filters, cap and cistern, lantern, bridge, press-blocks, flouter, lever, windlass, and rope.

The press, or filters, are two strong upright pieces of oak, which are preferred in their situations, by being let into the ground first, and then by the cistern-press, which is a thick piece of timber, extending from one cheek to the other, near to the ground, being open mortised at each end, reeling upon a shoulder, and clipping the upright; through these open mortises, and the upright, a strong iron pin is passed, which prevents the cheeks from spreading or giving way in the operation of pressing. A corresponding piece is fixed near the top, which is mortised and fastened in the same manner to the cheeks, through the centre of which the female screw or nut is made, in that cafe denominated the cap.

What is termed the vat, is a wide plank, with a groove running round it near the edge, or what is preferable, a raised levelled border coinciding with the edge, about an inch in thickness, to prevent the liquor from running off at the sides, and conduct it to the flutes or spout from which it is discharged into the receiver. This vat is firmly fixed on the cistern-press.

The cistern, when made of wood, is mostly nine or ten inches in diameter, and which passing through the cap, rises three or four feet to the lower end, which is square; the bridge is hung, by means of a rounded pin, which is a plank reaching from one cheek to the other, being freely moveable up and down, but kept to a regular position by open mortises. The lower end of the cistern is left of a larger diameter, when the lever is intended to work in it, being in this case perforated and hooped with iron, but the lantern is more frequently fixed upon it. This is made of two circular pieces of wood, lefs than two feet in diameter, being kept eight inches apart by ten strong pillars, between which a piece of ash or elm timber is occasionally placed, which is termed the lever. There are two of these belonging to the press, being used according to the extent of power required, one being shorter and less strong than the other, being capable of being worked by the strength of one man, during the commencement of the pressing; but as the liquor becomes more expressed and when nearly exhausted, another lever of greater length and strength is applied to the lantern, and worked by means of the windlasses, which is an upright pole, turning with an iron pivot in a socket on the ground, and passing through a beam in a rather free manner at the top, being removable when not wanted. A rope coiled round this windlass, is hung by a loop to the end of the lever, being there secured from springing off, by a wooden pin. The windlass has likewise at proper heights, from two to four bars of wood passing through for the purpose of handles, to which the strength of four men may be applied with much effect. The press-blocks are pieces of oak, about two feet in length, and six inches square, placed one above the other, crossting in alternately pairs, under the bridge, for the purpose of keeping the lantern, lever, and rope above the heads of the workmen at the windlasses.

It is suggested that iron screws have of late been coming much into use, being either cast or wrought; the price of the former being about 2l. 15s.; and of the latter nearly 10l. The power is supplemented by some to be increased by the
the fineness of the threads in the iron screw, while others admit of no other superiority but that of durability.

The price of a good prefs with wooden screw is usually about ten guineas.

It has been suggested by the author of the Rural Economy of Gloucestershire that the situation of the prefs should be at some distance from the mill as convenience and the nature of the building will permit, in order to the more ready conveyance of the ground pommage or pulp from the mill to it. The size of the cyder-prefs may be different according to the extent of the apple orchard.

An improved "Large Cyder-pref" is shown at fig. 3, in which A A is the base or foundation with its supporting parts: B, B, the cheeks or filters: D D the cross piece at top, through which the screw passes, and which consequently contains the nut or female screw: E the screw with its appendages: F F the bridge or cross piece which acts on the pommage: G G is the wide planks or vat on which the pulp rests in the hair bags; in which the liquid of the liquor's falling off is seen: H H (fig. 4.) is the windlass with its handles, wheel, rope, &c.

At fig. 5, is seen a small Cyder-pref of a different kind, which acts by means of a heavy pole or block of wood made of a conical form, moving round the centre by a lever which is inserted into its base, as shown at A and B: C is the bed of the prefs, notched for letting off the liquor into the cask or vessel, D, placed below: E, E, E, are the feet or blocks on which the whole rests.

Cyderspirit, a spirituous liquor drawn from cyder by distillation, in the same manner as brandy from wine. The particular flavour of this spirit is not the most agreeable, but it may, with care, be distilled wholly of it, and rendered a perfectly pure and inoffensive spirit, upon rectification. The traders in spirituous liquors are well enough acquainted with the value of such a spirit as this: they can give it the flavours of some other kinds, and sell it under their names, or mix it in large proportion with the foreign brandy, rum, and arack, in the last, without danger of a discovery of the cheat.

Cyder-Vat, is a term applied to that part of the cyder-prefs which first receives the liquor as it is forced out from the pulp, and by which it is conveyed into the receiver. See Cyder-Prefs.

It is likewise a name often given to the vessels which receive the cyder before it is racked off into the l Kobe casks.

It is remarked in the Survey of the County of Gloucester, that the vat is still, in some cases, covered with lead, although the pernicious effects of its being corroded by the acid of the liquor have been frequently experienced. It should on this account be always made of some form of hard wood.

Cyder-Vinegar. See Vinegar.

Cyder-Wine, is the name of a kind of family wine made by concentrating the juice of apples, by evaporating it to nearly one half, and afterwards, when it becomes cold, fermenting it, in a suitable cask in the usual way. By this means a very pleasant and cooling wine is said to be prepared.

Cydises Mons, in Ancient Geography, a mountain of Asia, towards Armenia. Strabo.

Cydna, a town of Macedonia, the fame with Pydna.

Cydnus. See Cidnus.

Cydnus, a river of Asia Minor, in Bithynia.

Cydoessa, a fortified village of Phrygia, at a small distance from the sea, which belonged to the Tyrians.

Cydonea, an island of the Mediterranean sea; opposite to that of Lesbos; one of the five islands comprehended under the denomination of Leuca.


Cydonia, or Cydonitis, in Ancient Geography, la Cande, the most ancient city in the island of Crete, said to have been built by Minos and enlarged by the Spartans. It stood according to Strabo, Pliny, and Dionysius Siculus, on the coast opposite to the Lacedaemonian territory is the Peloponnesus, and it was the most powerful and wealthy city of the whole island; since in the civil wars it with- flooded the united forces of Gnosius and Gortys. On account of its antiquity, it was called by the Greeks "the mother of cities." From Cydonia the quince-tree was first brought into Italy, and thence the fruit was called malum Cydonium, or Cydonian apple.

Cydonites Vixum. See Vixum.

Cydrana, in Ancient Geography, a town of Asia Minor, situated on the confines of Phrygia and Lydia; W. of Colofa, S. of the Meander.

Cydrine, a town placed by Strabo on the frontiers of Epirus and Macedonia, belonging to a people, called Byfys.

Cydrus, or Cydrina, a town of Asia, in Armenia. Steph. Byz.

Cyreniun, a place of Ethiopia, which, according to Arrian, was situated between the Nile and the town of Adult.

Cygnus, or Cygnus, a town built by the Greeks at the lower part of the Euxine sea, near the banks of the Phasis.—Alfo, another town in the same country at a great distance from the Phasis. Pliny.

Cygnus, or Cygnus, Gallina, the Swan, in Afternum, a constellation of the northern hemisphere, between Lyra and Cepheus. See Constellation.

The stars in the constellation Cygnus, in Ptolemy's Catalogue, are 19; in Tycho's, 18; in Hevelius's, 47; in the British Catalogue, 81. For an account of the variable stars in this constellation by Edward Pigott, esq. see Phil. Mag. vol. lxxvi. p. 198, &c. For observations on the comparative altitude of its stars by Dr. Herschel, see Phil. Trans. vol. lxxxvii. p. 231, 217. vol. lxxxviii. p. 305.

Cygnus, or Cygnus, in Ornithology, a species of Anas, which. See also Swan.

Cygnus, or Cygnus, coccullatus, the hooded swan, a name very improperly given by some authors to the dodo, a very large bird, rather approaching to the callowary kind, but not to long legged, or long necked. Ray. See Dinus Neptus.

Cyza Portus, in Ancient Geography, a sea-port on the coast of Carmania, between the promontories Bagra and Alabater.


Cylarabis, a place in the Peloponnesus, in Laconia, about 300 paces from Sparta, where the youth exercised. Cyllices, a people of Illyria, according to Athenaeus, called by others, Eubeii.

Cyliramni, a people of Greece, in the Phthiotideterritory, between the Sperchius and Alopus. Ortelius says that they were the inhabitants of the town of Harclea, situated at the foot of Mount Oeta.

Cylinder. If a right-angled parallelogram be made-
the solids to revolve about one of its sides which remains fixed, the solid figure thus described is called a cylinder. The axis of the cylinder is that side of the parallelogram which remains fixed. This solid is terminated by three surfaces: a convex surface, and two plane circles, which are the ends, or bases, of the cylinder.

The above is Euclid's definition (Def. 21. 11. E.): it may be rendered more general. Let there be a plane circle, and a right line drawn from the centre, whether perpendicular, or inclined in any manner to the plane of the circle; and let another right line, indefinitely produced, be carried completely round in the periphery of the circle so as to be always parallel to the right line drawn from the centre; thus the surface described by the revolving line is called a cylindrical surface, of which the plane circle is the base, and the line drawn from the centre the axis. A cylinder may now be defined to be a solid figure bounded by a cylindrical surface, and two plane circles equal and parallel to the base of the cylindrical surface. This definition will coincide with Euclid's, when the axis of the cylindrical surface is perpendicular to the plane of the base. In this case the solid is called a right cylinder; in all other cases it is called an oblique cylinder.

From these definitions the following consequences may be described in a manner too obvious to require to be formally demonstrated. If a plane, parallel to another plane, drawn through the axis of a cylinder, cut the plane of the base of the cylinder in a right line that is a tangent of the base; that plane will touch the cylindrical surface, and will meet it in a right line parallel to the axis: but if such a plane cut the plane of the base in a right line that passes within the base, it will cut the cylindrical surface in two parallel right lines, and the common section of the plane and cylinder will be a parallelogram. And again, the common section of a cylindrical surface, and a plane parallel to the base, is a circle having its centre in the axis.

Let us now consider the section of a cylinder by any other plane. Suppose a plane (Plate IV. Geometry, fig. 3,) to cut a cylinder in the common section PQ: let the cutting plane produced meet the plane of the base in the line MN, and from E, the centre of the base, draw the diameter CD, perpendicular to MN, and let a plane drawn through CD, and the axis of the cylinder, EF, meet the cutting plane, in the line PQR, and the cylinder in the parallelogram ABCD: let the axis of the cylinder, EF, meet the line PQ O M, (which is plainly the middle of PQ,) and through O, and any other point of PQ, as I, draw GH and ST parallel to MN: let a plane, STZX, be drawn through ST parallel to the plane, GHKL, that passes through GH, and the axis EF: because GH is parallel to MN, the common section of any two planes drawn through these lines will be parallel to both of them: therefore KL is parallel to GH: and in like manner XZ is shown to be parallel to MN. Therefore the figures, GHKL, STZX, are parallelograms; and GH = KL = CD, also ST = XZ. Hence XZ is parallel to MN, it is perpendicular to CD, and consequently it is bisected by CD: hence it is plain that ST is bisected by PQ. Now

\[ PQ : CD, \quad \text{or} \quad GH :: PI : CY \]

\[ PQ : CD, \quad \text{or} \quad GH :: IQ : DY \]

Therefore, because CY \times XD = XY \times SI, \quad \text{PQ} :: PI \times IQ :: SI.

Therefore the section is, in general, an ellipse, of which PQ and GH are two conjugate diameters.

Two conditions are necessary to make the section PQ a circle: the conjugate diameters PQ and GH must be equal; and they must cut one another at right angles.

The first of these conditions will take place when the triangle, ROE, is isosceles, or when the line, PO, is so inclined to the axis of the cylinder, as to make the angle POP = the angle AFO, and the angle POE = CEO. The second condition requires that GH be perpendicular to PQ, or MN perpendicular to FR; which cannot be the case unless the plane, APCD, be perpendicular to the ends of the cylinder as well as to the plane of the section PQ. Hence, then, we are to conclude that, if a cylinder be cut through the axis, by a plane, ABCD, perpendicular to the two ends, and likewise by another plane, PQ, perpendicular to the former, in such a manner that the second plane, PQ, is equally inclined to the axis of the cylinder as the two ends, but in a contrary position; the section of the cylinder by the second plane will be a circle equal to the ends of the cylinder. Such a section of a cylinder is usually called a subcontrary section. In a right cylinder the section parallel to the base, and the subcontrary section, are confounded together, and make only one section. Every other section of a cylinder, excepting those mentioned, is an ellipse.

The solidity of a figure, of which all the parallel sections are equal, such as a prism or cylinder, is measured by the product of the surface of one section by the perpendicular distance of the extreme sections. Hence all cylinders are equal in solid content, that stand on equal bases, and have equal perpendicular heights, however they may differ from one another in degrees of obliquity. If a cone and cylinder have equal bases and equal perpendicular heights, the solidity of the former will be one-third of the solidity of the latter. Euclid has demonstrated this proposition in the case of the right cone and cylinder (10. 12. E.), and the same demonstration will equally apply when the solids are oblique.

The convex surface of a right cylinder is measured by the product of the altitude multiplied by the periphery of the base. If a rectangle be constructed, having its length equal to the altitude of a right cylinder and its breadth equal to the periphery of its base; it is plain that such a rectangle, being lapped round the convex surface of the cylinder, will completely cover it. From this we may derive the solution of the problem (fig. 4.) which requires to trace the line of shortest distance between two points (as A and B) on the surface of a right cylinder. Through one of the points, as A, draw a plane, MAN, parallel to the ends of the cylinder, and through the other point, B, draw BG in the cylindrical surface parallel to the axis, E F: take cd, ed, &c., in the same surface, parallel to BG, and of such lengths that they may bear to the arcs, cA, eA, &c., the same proportion that BG bears to the arc GA: then will the points, d, e, &c., mark out the line of shortest distance between two points, on the surface of the cylinder. If the surface of the cylinder be rolled off into a plane, the arcs AG, AV, &c., as well as the lines BG, cd, ed, &c., will be right lines, and therefore the points, d, e, &c., will be in the right line between A B, which is the shortest distance between those points.

If an oblique cylinder be cut by a plane perpendicular to the axis, then, according to what has already been shown, the section will be an ellipse, the periphery of which will be at right angles to all the right lines drawn in the surface of the cylinder parallel to the axis; and because these right lines are all of the same length, equal to the axis, it readily follows that the convex surface of the cylinder is measured by the product of the axis into the periphery of the ellipse.

It is demonstrated in mechanics, that the solidity of a cylin-
C Y L

cylinder is the fadum of the generating rectangle ABCD. 
Plate IV. Geometry, fig. 5.) into the periphery of the circle described by the radius E G, which is fadum of E F, or the lemmadiameter of the cylinder. See Centro-baryc method.

Cylinders, for the ratio of. As all cylinders, cones, &c. are in a ratio composed of their bases and altitude: hence, if their bases be equal, they will be in the ratio of their heights; if their altitudes be equal, in the ratio of their base.

Hence, also, the bases of cylinders and cones being circles; and circles being in a duplicate ratio of their diameters; all cylinders and cones are in a ratio composed of the direct ratio of the altitude, and the duplicate one of their diameters: and, if they he equally high, as the squares of the diameters.

Hence, again, if in cylinders the altitude be equal to the diameter of the bases, they will be in a triplicate ratio of the diameters of the base. All cylinders, cones, &c. are in a triplicate ratio of their homologous sides, as also of their altitudes.

Again, equal cylinders, cones, &c. reciprocate their base and altitudes. See Cone, &c.

Lastly, a cylinder, whose altitude is equal to the diameter of the base, is to the cube of its diameter, as 7/5 to 1000.

To find a circle equal to the surface of a given cylinder, we have this theorem: the surface of a cylinder is equal to a circle, whose radius is a mean proportional between the diameter and height of the cylinder.

The diameter of a sphere, and altitude of a cylinder equal thirds, being given, to find the diameter of the cylinder: the theorem is, the square of the diameter of the sphere is to the square of the diameter of the cylinder equal to it, nearly, as triple the altitude of the cylinder to the double the diameter of the sphere. See Sphere.

To find a cone, or cage, whose cylinder may be formed, or whose with any cylinder may be covered. With the diameter of the base describe two circles; find their peripheries: and, upon a line equal to the altitude of the cylinder, form a rectangle, whose other dimension is equal to the found periphery. Thus may the cylinder required be formed, or covered.

When the cylinder is oblique, the effimate of its superfcies depends upon the rectification of the ellipse; for a plane cutting the cylinder at right angles to the axis will produce an ellipse, and the superficies will be equal to the product of this elliptic periphery by the side of the cylinder.

Cylinder, refiflance of a. See Resistance.

Cylinder, fienceography of a. See Scenography.

Cylinder, in Zoology, the Voluta Oliva; which see.

Cylinder, concave, of a gun is the inward cavity or bore of the gun, which receives the powder and shot. See Cannon.

Cylinder, charged, is the chamber and part of the concave cylinder, which is filled or occupied by the powder and ball. See Cannon.

Cylinder, vacan, is that part of the bore which remains empty after the gun or other piece of ordnance is loaded.

Cylinder, rolling, in Mechanics, a cylinder which rolls up an inclined plane.

The phenomena of the rolling cylinder may be easily accounted for what we have observed under centre of gravity.

For let A B E D (Plate XXII. Mechanics, fig. 1.) represent the section of a cylinder of wood, biffed on one side by a cylindrical piece of lead, as B, which will bring the centre of gravity out of the centre of magnitude, C, to some point, G, between C and B. Let F H be an inclined plane, whose base is F L. It is evident the cylinder laid upon the plane will no where roll but there, where a perpendicular to the horizon, F L, passes through the centre of gravity G, and that point of the plane E, in which the cylinder touches it; and this, in all angles of inclination of the plane less than that whose sine is equal to CG, the radius being equal to G, will be in two situations A B E D, and a b e d: because when the cylinder moves, the centre of gravity describing a circle round the centre of magnitude C, this circle will meet the perpendicular in two points G and g, in each of which the centre of gravity being supposed, the cylinder will roll. Therefore the cylinder moves from E to e by the descent of the centre of gravity from G to g, in the arc of the circle G L G'.

If the cylinder A B E D, f g. 2., inclining on the horizontal line F L, in the point E, has the centre of gravity G in the horizontal diameter D B, it will gravitate in the perpendicular G'; if the plane F H touches the cylinder in the point e, it is evident the cylinder cannot either ascend or descend on such a plane. Because G in any situation between e and H, or e and F, will gravitate to the left or right from the point in which the cylinder touches the plane; and so will in either case bring it back to the point e. And as the angle E C E is equal to H F L, it follows, that a cylinder cannot ascend on a plane whose inclination is greater than that angle.

Cylinder, Boring, is the method of boring out and smoothing cylinders of brass, iron, or other metals, for pump-barrels, fleam-engines, &c. &c.

Plate XXIII. Mechanics is appropriated to the description of a machine for this purpose, designed by Mr. John Dixon, Maid-lane, Southwark, and erected by him at the Falcon iron-foundery.

Fig. 1. is an elevation of the machine, in the operation of boring a cylinder for a fleam-engine. Fig. 2. is a plan. Figs. 3, 4, 5. parts of the machine. Fig. 6. an end elevation. Fig. 7. a fection.

The machine is turned by a fleam-engine, which communicates motion by means of a coupling-box, a, to a long iron shaft A B, turning in brass bearings, supported on iron standards C D, bolted to the two ground ribs E, F; this shaft (called the boring bar) is perforated from end to end, as is shown in the section, f g. 3, and has also a fig. 4, 5, through it nearly its whole length; it is turned in a b, and thus made a perfect cylinder. Another short cylinder D D (in the section, f g. 3, and f g. 5), filled with iron upon the boring bar without limbs, and is made to turn round with the bar, by two short iron bars, a, c, which pass through the flit, h, h, made in the boring bar, and their ends into two notches made in the end of the short cylinder D D. It is a long iron going with the box cylinder, and of the same length; the end which carries the boring-bar, and which is not cut into a flits for the length, passes through holes made in the flit of the box cylinder, and is held in by wedges, as in f g. 5.

The knifes or cutters, e, f, e, f, are held in a frame, and wedges in lochuses round the circumference of a cylinder g h, c, 4, c, c, the cross block; the inner circle, f, f, f, f, is the frame in as the outside of D D, upon which it rests, and made to turn round with it, by two small wheels driven into notches, p, p, made in the inside of the rings, and entering similar notches in the outside of D D.
The cylinder, if to be bored, is fixed firmly concentric with the boring-bar upon a frame of cast iron, consisting of several pieces, which are moveable and can be set to hold a cylinder of any length or diameter. The first are four cast iron bars, 1, 1, 1, 1, with flats through them nearly their whole length; they are firmly bolted down to the ground-floor, and support two cross bars K, K, which can be fixed at any place along the bars 1, 1, 1, 1, by screws passing through the grooves. The cross bars, K, K, have grooves through them in the direction of their length, to receive screws which fix upon each bar two uprights, L, L, at any place.

By this sliding of the two cross bars K, K, the fixtures are adapted to the length of the cylinder, and by moving the uprights L, L, nearer to or farther from each other, the cylinder is fitted in its diameter, horizontal; the weight of the cylinder is supported by blocks and wedges driven under it upon the cross bars K, K, and it is kept down by two strong wrought iron-bands, r, r, put over it, and drawn down by screws on the top of the uprights L, L.

A cross beam is fixed upon the end of the ground-floor, into which an upright beam, M, is mortised, and its upper end is supported by the beams of the ceiling; the upright has a socket fixed to it, in which a nut for the screw E turns, in such a manner that it cannot move backwards or forwards, though it is at liberty to turn round freely; an iron cross, m, m, is fixed on the nut to turn it by. The end of the screw, E, is square, and has a short cross bar, n, pinned on it, which has wheels at its ends, and runs upon a thick plank, N, supported on iron legs, o, o; at one edge of the plank, a piece of iron plate, p, is screwed and turned over at top, to form a groove in which one of the wheels runs; the cross bar and plank prevent the screw from turning while it can be moved endways along the plank.

In the working of the machine, the first thing is to fix the cylinder; for which purpose the plank, N, must be removed, the screw, E, drawn out of the boring bar, the upright, M, and iron standard, D, taken away, the weight of the boring bar being supported by blocks put under the middle of it; the cross beam, and the short cylinder D D, fig. 3, is now put upon the boring bar, the bars, d, d, fig. 3, being first put through the fitting, b, b, in fig. 1, in the bar at its end towards D, where it is enlarged for the purpose; the cutters are fixed in the block by wedges, and adjusted, that they may all be at the same distance from the centre, and that they may bore the cylinder of the proper size. The cylinder is now put over the boring bar, and when the end of the bar comes through the cylinder, the standard, D, is replaced; the weight of the bar is now supported, and the blocks in the middle can be taken away, to get the cylinder in its place, and fix it fast, as before described. The screw, E, is next introduced into the boring-bar, and pinned into the two cross bars d, d, as in fig. 3, the upright M, is fixed, and the nut of the cross, m, m, screwed upon the screw E; the plank, N, is set up, and the whole put in the situation represented in the plate, except that the cutter block is on the boring bar towards A.

The steam-engine is now set to work, and the boring bar thereby turned; a workman turns the cross, m, m, and with it the nut of the screw E; as the screw is prevented from turning by the cross bars, n, on its end, the screw is drawn endways, and consequently the cutter block with it, until it meets the end of the cylinder, when the cutters begin to bore, forming a new smooth cylinder, somewhat larger than the old one left by the calling of the cylinder; as the cutters clear the metal before them, they are drawn further into the cylinder by turning the cross, m, m, until they come completely through. The operation is now finished, and the cylinder is removed in the same manner as it was put in, the machine being left in pieces ready to put in another cylinder to be bored.

A great number of cutter blocks, fig. 4, are cast, of different sizes for various cylinders, and they all fit upon the same boring cylinder, D D, fig. 3.

CYLINDRELLA, in Entomology, a species of Phalina Tunes, found at Hamburg.

CYLINDRI, in Cylindrical. A fossil shell, which has been referred to this genus by Mr. Walcott, has been figured in his 'Petrifications found near Bath,' fig. 46; it has four spires or turns at one end, and is rounded at the other. They are found in the stone Quarries near Bath.

CYLINDRIA, in Botany, (so called because the segments of the border of the corolla are, by their juxtaposition, a continuation of the cylinder of the tube.)—Lour. Cochon, 69. Clas and order, tetradria monogynia.


CYLINDRICAL Column, Columna, Mirrors, Wax-Candles. See the several subfamilies:

CYLINDROID, formed of Ἵνδος, cylinder, and ὅς, form in Geometry, a solid body, approaching the figure of a cylinder; but differing from it in some respect, e. g. as having its bases elliptical, but parallel, and equal. The follicle and curve superficies of this solid are found in the same manner with those of the cylinder; viz. by multiplying the circumference of the base by the length or axis, for the surface; and the area of the base by the altitude, for the solidity.

CYLINDROID, hyperbolic. See HYPERBOLIC.

CYLINDROIDEAE, in Zoology, a section or division of the Voluta in the class of Vertebrata.

CYLIPSEUS Sinus, in Ancient Geography, a gulf of the Baltic sea; supposed by Cellarius to be the gulf of Livonia.


Gen. Ch. Cal. Perianth one-leaved, four-parted, very large, permanent; upper division reflexed, bind at the tip; the reil erect, oblong, acute. Cor. papilionaceous, a little longer than the calyx, permanent; stamens roundish, emarginate, with a small lobe on each side at the base; wings oblong, obtuse, shorter than the stamens, with a process on each side at the base; keel oblong, cloven at the tip and the base, longer than the wings. Stam. Filaments, one single; nia united, ascending; anthers roundish, Figs. 7.
C Y M

**Pig.** Germ superior, egg-shaped, compressed; *Hyle* axil-shaped, ascending; stigma somewhat capitulate. *Peric. Lagenum ovate-oblong, compressed, one-celled. Seeds two, oval.*

Eff. Ch. Calyx very large, four-parted; upper division bifid at the tip, Corolla permanent.

*Sp. I. C. villosa, Hort. Kew. 3. 36.* Introduced into Kew garden in 1776. Native country unknown. It is a shrub, and requires the heat of a house. 2. C. stactica, Willd. Roxb. Corom. 1. 64, tab. 82. A shrub. Stem twining. Leaves ternate, with the presence of phaeoles; stipules small, lanceolate-axil-shaped. Flowers in axillary racemes the length of the leaves; calyx green, veined; corolla yellow. A native of mountains on the coast of Coramandel. As there is no description of C. villosa in the Hortus Kewensis, we cannot determine the specific difference of the two plants.

**CYLISTA NOS,** in *Ancient Geography,* a town of Italy, called also *Parthas.*

**CYLISTARUS,** a river of Italy, mentioned by Lyceophorus.

**CYLISTICI,** formed of *P. exs. to roll, or tumble, in Antiquity,* a designation given to the *pancratiafis*; because when the weaker found himself fore pressed by his adversary, he fell down, and fought, rolling on the ground. See *Pancratafis.*

**CYLLEA,** in *Ancient Geography,* a town of the Chersonese of Thrace, situated on the Hellespont, which had been episcopal; called *Caris,* by Mela.—Also, a town of A sia Minor, in the Troade. Herodotus.

**CYLLANTICUS,* or *Cyllanicus,* Trachus, a particular country of Asia, in Pindus. Pliny.

**CYLLENA,* or **CYLLENE,** a town situated on the western coast of the Peloponnesus, near Elea, of which it was the port; supposed to be the present Chaireus. It had two temples; one of *Achælius,* with a fine statue of ivory, and another of *Venus,* in which was a naked statue of Mercury.—Also, a town of Asia Minor, in the Melide, named, according to Xenophon, *Egyptian.*

**CYLLENE,** a mountain of the Peloponnesus, in Arcadia, which, according to Pausanias, was the highest in this country. It was situated to the north-east, between the territory of Pellene in Sicysin and that of Phoneus in Arcadia. On the top of the mountain was a temple of the Cyllenean Mercury, in which was a wooden statue of this god. Near this mountain, according to Homer, was the tomb of Pegeus, confiding of a mound of earth encompassed by a bough of olives. Eupyctus, it is said, died of a wound inflicted by a serpent.

**CYLLOPERA,** a place of Greece, in Attica, near mount Hymentes, in which, as Suidas says, was a temple consecrated to Venus.

**CYLLOSIS,* or **CYLUM,* from *xwos,* lane, in *Medical Writers,* is used to signify a key put out of joint outwardly;—also one that is lune and crooked.

**CYLONGO,** in *Geography.* See *Chylongo.*

**CYMA,** in *Architecture.* See *Cymatium.*

**CYMA,** in *Botany.* See *Cyma.*

**CYMA,** in *Ancient Geography,* an island in the Mediterranean sea, near Sicily, according to Steph. Byz.; but placed by Lyceophorus near Italy.—Also, a very high mountain of Italy.

**CYMATITES,** in *Natural History,* a name given by some writers to a species of *Astraeis,* the linings of which are indicated and represent waves.

**CYMATIUM,* CIMA,* or **CYMA,* an architectural moulding of an undulated form, being concave at top and convex at bottom. (See Plate of Mouldings.) It is also called *doucine* and *gala divitta.* Some write the word *fuminae,* from *finoa,* *canus,* flat-nosed, but this etymology is improbable: the beauty of the moulding confidts in its having its projection equal to its height. M. Felibien, therefore, rejects this origin; contending, that the moulding is not so denominated from its being the uppermost member of the cornice, but, according to the sentiments of Vitruvius, from its being waved, from the Greek *aparaxos,* undula of *ups,* waves. This is certain, that Vitruvius sometimes ules the word *undulor* for *cymatium,* and sometimes *ipsa,* e. c. *solution, purulation,* because concaria where the *cympa* is found, separate one piece of architecture from another; as the pediment from the column, and the frieze from the cornice. But it must be observed, that Vitruvius appears to use the term *cymatium* for any subordinate moulding which terminates a principal member without regarding its particular form. Thus he mentions the Doric *cymatium,* which, from the authority of ancient examples, we should pronounce to be an ovolo, and the Libyan *cymatium* which Newton supposes to be an age.

Felibien makes two kinds of cymatium; the one right, the other inverted; in the first, that part which projects the farthest is concave, and is otherwise called *gala left,* and *noccine.* In the other, that part which projects farthest is convex, called *gala inversor,* or *talon.*

Our architects do not endeavours to give the same cymatium to their mouldings, except when found on the tops of cornices, but the workmen apply the same indifferently, wherever they find them. Palladio distinguishes the *cymatium* of the cornice by the name *intraveda.*

**CYMATIUM,* Tyfien,* confids of an ovolo, or quarter round. Philander makes two Doric cymatium, whereof this is one: Baldus calls this the Libyan *ofregal.*

**CYMATIUM,* Doric,* is a cavetto; or a cavity less than a semicircle, having its projection subdupile its height.

**CYMATIUM,* Lebian,* according to Vitruvius, is what we otherwise call *talon,* viz. a concavo-convex member, having its projection subdupile its height.


**Cymbum,* Hermaphrodite flowers. Calyx five- or seven-valved, one-flowered, to place two of such flowers, to each of which is pressed close to the rachis and parallel, not one hidden by the other; outer valve linear, glaucous, ciliated at the back; inner equal in length, semiovate, acute, boat-shaped, very much compressed, fringed, coloured, ciliated at the back, enclosing the corolla. Cor. Glumes two, hyaline, smaller than the calyx. Stam. Filaments three; anthers black. *Pig. Fem. tender; Hyle simple; Rigma two, black-bearded. Female flowers. Cal. one-valved, egg-shaped, slightly hispid at the tip, ciliated at the edge, opposite to the rachis, pressed close. Cor. none. *Pig.* as in the hermaphrodite, but with longer Rigma.

Eff. Ch. Inflorescence half-splitted,*Herm. Calyx two-valved, one-flowered, parallel to the rachis; outer valve linear; inner boat-shaped. Calyx one-valved, egg-shaped, opposite to the rachis.

*Sp. C. ciliata,* Mart. Retr. Calyx five-valved, bract, a short, simple, or branched, with a single leaf, or leaflets. Leaf short, bracteolate, ciliated on the edge above the sheath with long separate hairs; sheath truncate, with a pale brown margin and ciliates. Spike two, terminal, linear, an inch and a half long, a line broad, one hermaphrodite, others female. Rachis linear, membranous, flat behind with three longitudinal tides alternately and flexuously hollowed out in front. A native of Bengal.

4 X. C Y M B A L.
CYMBAL, a musical instrument, used among the ancients; called by the Greeks κυμβαλις, and by the Latins cymbalum.

Syilburgus derives the word from three several roots, viz. from κύμη, curved; from κυπελλος, cup; and from σκευες, vessel. Irodore derives it from cum, and balliellati, an immo- delt dance used to accompany this instrument. The real etymology appears to be from κυμαθής, cavity.

The cymbal was of brass, like our kettle-drums; and as some think, resembling them in form, but smaller, and applied to a different use.

Cassiodorus and Irodore call it actusulum, the name of a cup or cavity of a bone wherein another is articulated; and Νεφοφων compares it to a horse's hoof; whence it must have been hollow; which appears, too, from the figure of several other things denominated from it: as a bath, cadium, goblet, calypso; and even a shoe, such as those of Empedocles, which were of brass.

In reality, the ancient cymbals appear to have been very different from our kettle-drums, and their use of another kind; to their exterior cavity was fastened a handle; whence Pliny compares them to the upper part of the thigh, crespidibus; and Rabanus to phials.

They were struck against one another, in cadence, and made a very acute sound. Their invention was attributed to Cybele; whence their use in festivals and sacrifices; setting aside this occasion, they were seldom used but by dissolute and effeminate people. M. Lampse, who has written expressly on the subject, attributes the invention to the Curetes or inhabitants of mount Ida, in Crete; it is certain theft, as also the Corybantes, or guards of the kings of Crete, and those of Rhodes and Samothraec, were reputed to excite in the muse of the cymbals. See Corybantes.

The symbols of Bacchus were two small brass vessels, somewhat in the form of a shield, which being struck together by the hands, gave a sound. The well-known statues of the dancing fawn has one of these in each hand. An instrument of this kind is frequently to be seen in the Bacchanalian facades or procissions represented in ancient sculpture. It is still in general use in eastern countries, and has lately been introduced among the troops of almost all the princes of Europe, on account of its utility in marking the steps of the soldiers, with force and precision during their march. Crotalos is the modern Italian name for this instrument; but κύμβαλος in Greek, and crotalum in Latin, implies one that was different from the cymbalum; a kind of cailam.

The Jews, too, had their cymbals, which they called כנף or כנף; or, at least, instruments which the Greek, Latin, and English translators render cymbals; or as to their matter, form, &c. the critics are wholly in the dark.

Le Clerc has taken some pains to prove, that the τειθεῖνις, or τειθείνης; or, at least, instruments which the Greek, Latin, and English translators render cymbals; or as to their matter, form, &c. the critics are wholly in the dark.

The modern cymbal is a mean instrument, chiefly in use among vagrants, gypsies, &c. It consists of a steel wire, in a triangular form, wherein are placed five rings, which are touched and flitted along the triangle with an iron rod held in the left hand; while it is supported in the right by a ring, to give it the fierer motion. Durandus says that the monks used the word cymbal for the cloister-bell, used to call them to the refectory. See Bell.

CYMBALARIA, in Botany. Bush Pin. See Anirrhinum Cymbalaria.


Cen. Ch. Cal. Pervianah ten-toothed, cret, permanent; two opposite teeth stronger and more spreading; the rest erect, linear. Cor. monopetalous, ringent; tube oblong, bellied, with border two-tipped; upper lip two-parted, reflexed, obdurate; lower lip three cleft, obtuse. Stemp. Filaments four, the length of the tube; anthers bind, prominent. Pet. Germ superior, egg-shaped; style filiform, the length of the flaves, incurved at the tip; stigma obtuse. Peric. Cypelis elliptic-heart-shaped, two celled, two-valved; partition contrary to the valves. Seed several, oblong, compressed.


Sp. C. dauria, Linn. Sp. Pl. Mart. Lam. Wild. Amm. Ruth. 47. tab. 1. fig. 2. Gmel. Sib. 3. 148. a. Gaet. tab. 52. fig. 12. Lam. Ill. 3. 530. Whole plant slightly pubescent and hoary. Root perennial, fibrous. Stems several, six or seven inches high; branches few, opposite, bunched. Leaves opposite, lanceolate-linear, acute. Flowers large, yellow, tinged with purple on the inflores. Lat. nearly, al- most feathery. Cypelis membranous, slender, brown bay, marked with a deep groove on each side, dehiscent only at the edge; valves finally narrower than the receptacle; receptacle large, fleshy, white, kidney-shaped, connected with the partition on each side by an intermediate flat shan- flance. Seeds from twelve to fifteen in each cell, surrounded by an irregular membranous edge, pendulous from a nearly terminal umbilicus, imbricated downwards, brown-coloured, A native of mountainous rocky places in Siberia. This genus is distinguished from all the rest of its natural family by the calyx.


Gen Ch. reformed. Calv three leaved. Cor. Petals two, generally smaller than the calyx-leaves; nectar a lip, concave at the base, without any spur, separate from the styme at its edges, its termination spreading, either upward or downward, divided or lobed. Stemp. Anther a hemi- spherical deciduous terminal lid, of two or four cells; malle of pollen p驯ed, in pans. Pet. Germ inferior, oblong or ovate, erect, narrowed; style hemi-cylindrical, often gibbous, concave in front; stigma either concave or convex, in the fore-part of the style near the top. Peric. Cypelis oblong or ovate, with three or five ribs, with one cell and three veins, opening by clefts between the ribs. Seeds numerous, minute, even clotted with a chalky tinge, inserted into the downy inner ridges of the valves.


Obl. Very rarely the two lower most leaves of the calyx are united into one. For the reasons of our thus denominating the three outer petals of Linnæus, or outer calyx-
leaves of Swartz and Jussieu; see Sm. Introd. to Botany, p. 471.

This genus was founded by Dr. Swartz, and consists in his last work on the subject (Genera et Species Orchidearum, the first article in Schradel's New Journal of Botany, publ. 1863), of 47 species, 29 of which are said to be parasitic and 14 to grow on the ground. Among the former are Cymbidium auriculatum (Epipedium auriculatum, Linn.).—C. trispernum (E. trispernum, Sm. & Pict. t. 14.) a native of Jamaica, which flowered several years ago in the collection of the Hon. Mrs. Barrington, and also at Kew, but has rarely been seen in our gardens. Its numerous green bulbs, reflecting a dilly of great grace, bear long narrow leaves, and elegant spikes of white flowers. Many beautiful species of Epipedium or Limebridium in Linnaeus, Roxburgh, &c. are referred to this section by Dr. Swartz, which do not all well agree together. Among the terrestrial species is C. pachyblom (L. pachyblom, Linn. Curt Mag. t. 116.) and others alike to it.—C. hystrix, Sm. Exot. Bot. t. 69.—C. giganteum (Satyrion giganteum, Linn.) with several other Lithium in Satyria from Africa.—C. cordy- rhizum (Ophrys cordy-rhizum. Linn. Engl. Bot. t. 1547.) is the only British Cymbidium. This has lately been found, much more plentifully than heretofore, by Mr. Edward Maughan, in boggy sandy ground not many miles from Edinburgh. It grows also in the more northern parts of Europe and America. The delicate roots, branched like a coral, and fragrant like Vanilla, even long after drying, are very remarkable. The flowers are small, greenish, and inconspicuous. Leaves none, except a few floating scales.

The genus of Cymbidium is not one of the most natural, its species having a very striking habit of opposite or in common places as a general distinction. See Lithiium.

Cymbium, in Natural History, a name given by many authors to a kind of sea-shell, commonly called the gorgon shell. It is of the genus of the corallina globula, or dolium, and there are several species of it.


Gen. Ch. Calypsis, fested in a tunnel hollow of the common peduncle. Calypsis monopetalae: tube crooked; border rather funnel-shaped, unequal quinquenae, Stam. filaments four; two bifrons, others two, long, twodoubled; one lobe placed perpendicular upon the other. Pjll. Gern superior; bly to biflap, the length of the tube; stigma cap-shaped. Seeds two, naked. Linn. Jaff. Gent. Almost naked. Vent. Petio a thin peduncle adhering to the seeds, but continuous with the style, two-feaded. Salib.

Eff. Ch. Calypsis, feasted in a tunnel hollow of the common peduncle. Anthers long; one lobe placed perpendicular upon the other. Stigma cap-shaped.

Sp. 1. C. mutabilis. Salib. Parad. 49. (Pachytrpheta; Vahl. Sp. P. t. 108). Zephrania mutabilis; Lam. Ill. 257. Verbena mutabilis; Jard. Bibl. 38. Jard. le Coll. 2. 334. V. Orchid. tenuifolium; Herb. Prod. 238. V. americana flava conchreae; Brey. Prod. 2. 103. Sherardia tenuifolia; Vahl. Sex. 49.) "Leaves egg-shaped, tenuous underneat, broader spreading and bly-shaped at the tip; back of the calyx feebly toothed; corolla externally velled-pubescent; stigma entire." Stem becoming somewhat woody, with widely spreading branches, sharply four-cornered, hairy. Leaves from two and a half to four inches long, yellowish-green, egg-shaped, serrated, obtuse, hairy, paler and more nappy underneat, wrinkled; petals half an inch long or more, convex on the upper side, bordered almost to the bottom with the decurrent leaf. Flowers in a long spike; common peduncle hallowed out for each flower as in some of the gracies; bracts shorter than the calyx; calyx half an inch long, exceedingly compressed, with two deep furrows next the peduncle, hairy on the outside; corolla an inch long or more; tube dark red, with a whitish bottom, cylindrical, thickly beaded within on one side with erect hairs; border deep scarlet, gradually changing to a lice tinge, more than twice as long as the tube, its lower part only a little wider than the tube, somewhat compressed with two furrows in front, when it is internally beaded up to its mouth; upper part horizontal, with a deep purle bract-shaped mark about the mouth, divided into five short rounded unequal segments; filaments whitish, short, bearded on one side; bract ones very narrow; anthers pale yellow; pollen consisting of three or four globular bodies confluent with a still larger central one; style pale yellow, smooth; stigmas green, smooth, Salib. A native of the island of Orkna and the adjacent continent of North America. 2. C. americana. (Verbeana americana; Linn. Sp. Pl. PI. 538. tab. 288. fig. 4. and tab. 357. fig. 7. Sherardia utricol stranded; Dtrct. PI. tab. 5. fig. 1.) "Spikes very long, leafy." A native of the island of Orkna. 3. C. jamaisicensis. (C. urticulatum; Salib. Parad. Lond. 53. Stachytrpheta jamaisenesis; Vahl. Sp. Pl. 1. 207. Verbeana jamaicensis; Linn. Sp. Pl. 3. 1. 396. PI. 3. 6. tab. 85. V. erecta Lecl. Brown. Jard. 115. V. folio rubrotuncul. Vahl. Hist. 171. tab. 387. fig. 1. Sherardia tenuifolius. flore purpureo; Vahl. Sex. 49. Valenzonoides; Borth. Hort. Lugd. 2. 270.) "Leaves oval-lanceolate, smooth; middle nerve somewhat hairy underneath; bracteole prefrid their whole length, ovate-acuminated; back of the calyx not toothed; stigma entire." Stem becoming woody, hairy when young. Leaves bright green, sharply serrated; petals long. Flowers in a very long slender spike, fimbriate; common peduncle with a deep shing cavity; bracts membranous towards the base, slightly torn or crumulate; calyx only about two lines and a half long, exceedingly compressed, four-tofted, the dorsal nerve terminating below the top; corolla violet-blue, internally bearded as in C. murabile; filaments white; anthers sulphur coloured; stigma greenish, smooth. Salib. A native of the island of Barbados. 4. C. indica. (Verbeana indica; Linn. Sp. Pl. 2.) "Spikes very long, leafy, naked; leaves lanceolate-egg-shaped, obly-toothed, fern smooth and even." Similar to the preceding, but differs in having the ilmen entirely smooth, the leaves more linear, not ferrated, gradually narrowed at the base, with petioles not margined. Linn. Flowers blue. A native of the island of Ceylon.

Cyme, Cyma, is a form or mode of inflorescence, consisting of several flower-stalks, all springing from one center or point, but each stalk is variously subdivided, and in this far respect, the cyme differs essentially from an umbel, the subdivisions of the latter being formed like its primary division, of several stalks springing from one point. This difference, however slight it may appear in description, is of great importance in nature. Examples of cymes are found in the genus Valerianoides, of which the common laurinae is a species. In several of these the subdivisions are numerous or often repeated, and some of them are embelish like the primary division; but this is at no moment, provided any
of them be irregular or dispersed. In an umbel, which node of flowering chiefly belongs to a natural order of plants thence called umbellate or umbelliferous, the inflorescence is never more than twice compounded, confining of a general umbel formed of several partial ones.

Linnaeus considered the cyme, as well the umbel, kinds of aggregate flowers. See Aggregate and Compound. Their talks he reckoned as a branched receptacle, their bracts or floral leaves, as a kind of callyx remote from the flower, for which he invented the term involucrum. Hence the flowers became florets, *fuctuli*. Many arguments may be found in favour of this hypothesis, especially what are derived from the analogy between such aggregate flowers and the proper compound or fyngeous ones, both having frequently radiant, female, or even neuter, marginal flowers or florets. In the marigold, *calendula*, a true compound flower with united anthers, the central florets are entirely male, the marginal ones female, exactly as in the umbelliferous flower *campanula*; and there are many similar instances in both families. In the cyme of *viburnum opulus*, and various species of *hydrangea*, the flowers of the circumference are very often dilated or radiant, and in that case neuter. Such flowers become double, as it is called, not by multiplication of their petals, or a change of flamen or style into the latter; but by a strange dilatation of their petals, attended with obliteration of the organs of impregnation. It seems to us, nevertheless, most natural and convenient to effect both the cyme and the umbel modes of inflorescence, as they so indistinctly, in some instances, side into a *corymbus*, a capitulum, or a *spica*; or at least evince a common generical affinity, if we may so express it, with those. We would therefore follow the example of those who characterize the genera of umbellate, as well as cymoide, plants by the real parts of fructification alone, being well convinced that to depend on such only, is one of the found- eit of the Linnaean maxims. See Genus and Inflorescence.

Cyme, called also incorrectly Cuma, in Ancient Geography, a very handsome town of Asia Minor, in Asia, at the lower part of a small gulf of the same name, north-east of Phocæa. It was also called *Phriviconites*, from mount Phritius, in the Locride, above Thermopylia. Some vestiges of this town are discernible in a place called Nomura.

Cymeus Sinus, the gulf of Cyme, was formed by the sea of the Archipelago and the extended cymeward along the coast of Etolia, between a peninsula which advanced to the north-west, towards the city of Lebbo, and another which advanced to the south-west, towards the entrance of the gulf of Smyrna.

Cymene, in Botany, a name given by the ancient Greeks to a plant with which they used to dye woolen things yellow, and with which the women also used to tinge the hair yellow. The cyme of the Greeks is evidently the same plant with the *luteum* or *lutea herba* of the Latins; and this is described to have leaves like the *linum*, or flax, and flowers like the *genista*. It is plain from this, that the *luteum* of the Romans, is the *genista tricolor* of Linnaeus, or dyer's weed, still used to dye yellow, and which answers to all the characters of the Roman description.

Cyminalis, a name used by some authors for the *genista*, the plant whose root is the fine bitter drug of that name.

Cymino, Cataplasm. See Cataplasm.

Cyminosma, in Botany, Gebr. See Laxmanna.

Cyminium. See Cymisnum.


Gen. Ch. Cal. and Cor. none. Barren flowers. Stem. Filaments none; anthers four, lanceolate-acuminate, erect, connivent; fixed to a scale or peduncle, (filament, Cauflum) which is bidental or quadrifid at the top; containing a solid mass of pollen, which, when mature, becomes filamentous. Fertile flowers. *F. Germ. two, nearly sessile, convex-plane, approximate; style to each one gen, filiform; *fras* awl-shaped. *Peric. Capsules two, approximate, compressed, two-valved; valves united by an ambient ring.

Sp. C. esquora. Konig. ubi supra, Pl. (Pluecgadrois) Theophrasti major; Caulin Monog. cum. tab.) Stem (root) perennial, rather woody, creeping, zig-zag, jointed, throwing out filiform radicles at each joint; branches (shoots?) rising from each joint, annulated towards the base. *Fructus* lineari, obtusa, membranous, fleshy; *fruits* flat, closely covering each other. *Seeds* or peduncle from the summit of the leaves, long, attenuated, nearly the length of the leaves; anthers attached lengthwise so as to leave a space at the two opposite sides, opening longitudinally, and discharging a white capillary pollen; *fruits* about an inch long; *fras* two at each style, longer than the style, dark yellow at the upper part, tubular when viewed through a microscope. *Fruit* roundish, compressed, with elevated margins, terminated by the remains of the style, rather woody, with a thin pulp. A native of the bay of Naples, totally immersed in the sea.

Cymotha, in Ancient Geography, a fountain of the Peloponnesus, in Cireseia; placed by Phint near the mountain *Scecos*.

Cyna, a town of Asia Minor, in Lydia.

Cynandra, a fountain of the Peloponnesus, in the Argolide.

Cynedes, in Ichthyology, a species of *Labrus*, which see.—Also, a name given by Grosou[c]us to the *Sparus argus*, and *Sparus Dentex* of Gmelin.

Cynetha, a town of Thrace, situated at the foot of mount Nerice. Steph. Byz.—Also, a town of Peloponnesus, in Arcadia, on the river Crathis. Pairanias says, that, in his time, many altars, consecrated to different deities, and a statue of the emperor Adrian, remained on the site of this town. Bacchus had a temple here, in which, in the winter season, the feast of this god was celebrated with peculiar ceremonies.

Cynamolgi, a name given by the Greeks to a people seated in the southern parts of Ethiopia. They had long beards, and kept very fierce dogs, in order to hunt Indian oxen, of which prodigious herds came amongst them every year.

Cynanche, in Medicine, *xvina*, from *xvina*, a dog, and *xyn, a triangle*; hence probably the French *xyninus*, and our own *quininy* or *quinine*. This term is applied by noiological writers to inflammations of the throat in general. It is synonymous with the Latin *xunina*. See Angina.

Sauvages has described a number of species of cynanche; but Dr. Cullen reduced them to five, setting aside all those which were only symptomatic, or mere varieties of the same disease. Dr. Cullen's species are, 1. Cynanche *tusfolia*; 2. C. *maigna*; 3. C. *tecostalis*; 4. C. *phynyaeus*; 5. C. *parvula*.

1. Cynanche *tusfolia*, is an inflammation of the mucous membrane lining the throat, and affecting especially the tonsils, and spreading from thence along the velum and uvula. The
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The disease is marked by a redness of the parts, accompanied by swelling, which is sometimes considerable, so as to render the act of swallowing painful and difficult, or even to impede it almost entirely. There is also a troublesome clamminess of the mouth and throat, with a frequent but difficult exertion of mucus; there is often a pain shooting into the ear; the voice is altered, and articulation rendered indistinct. A degree of fever is generally present.

This species of quinsey is never contagious. It terminates frequently by resolution, sometimes by suppuration, but hardly ever by gangrene. The progress of this inflammation to suppuration is, sometimes, indeed, very rapid; at other times there are several small abscesses, which break one after another, and the disease is tedious. Occasionally the tonsils become enlarged and hard after this inflammation, and remain so for years. When a large impuhtmic breaks, there is generally a sudden relief from the pain, difficulty of breathing, swallowing, and speaking; although often no matter is thrown up, but elles down the oesophagus.

The disease is commonly traced to exposure to cold. It affects the young and languid, and is very liable to return, in some constitutions, upon the application of cold to any part of the body, so as to become almost habitual. It occurs, especially in spring and autumn, when vicissitudes of heat and cold frequently take place. The inflammation and swelling often begin most violently in one tonsil, and afterwards, abating at that, increas in the other.

The remedies for inflammation and the antiphlogistic regimen are to be employed for the cure of this complaint. It is greatly aggravated by heating diet and stimulating medicines. General blood-letting is seldom necessary, but leeches to the neck and external fauces are very useful. Blitters, when early applied to the same parts, are also highly beneficial, and have often had the effect of curing by resolution a violent inflammation of the throat. When suppuration is begun, they can be of little use. Purgatives, repeated occasionally, are of essential benefit; and gentle diaphoretics are useful, whether in the shape of dittuntes, or saline medicines. The inflammation is often relieved by moderate antigents, and particularly acids, applied to the inflamed parts; hence the use of gargles, containing vinegar, lemon juice, or the mineral acids, and rendered palatable by means of honey or syrup. The acids conglutiate the mucus, which adheres about the parts, and cleanse the passages. In many cases, however, no application has assed more relief, than the vapour of warm water, received into the fauces by means of Mudge's inhaler.

The external applications of oil and volatile alkali, of vinegar, &c. by means of flannel, have little or no efficacy, unless employed so as to excite some inflammation externally.

II. Cynanche maligna, is the contagious ulcerated sore throat, which accompanies scarlet fever. See Fever, Scarlet.

III. Cynanche trachealis, or inflammation of the windpipe, is the technical name which Dr. Cullen, and after him, some other physicians have applied to the disease, popularly termed croup. See Croup.

IV. Cynanche pharyngea, appears to be the same disease as the first species, except that it is felted lower down in the throat.

V. Cynanche parotidea is a disease known to the vulgar, among whom it has obtained a peculiar application, in every country of Europe, but has been little taken notice of by medical writers. In England it is called the mumps; in Scotland, the branks; in France, orillons and ouries.

It is often epidemic, and manfully contagious. It comes on with the usual symptoms of pyrexia, which is soon after attended with a considerable tumour of the external fauces, and neck. This appears first as a granular movable tumour at the corner of the lower jaw; but the swelling soon becomes uniformly diffused over a great part of the neck, sometimes on one side only, but more commonly on both. The swelling continues to increase till the fourth day; but from that period it declines, and in a few days more passes off entirely. As the swelling of the fauces recedes, some tumour affects the telticles in the male sex, or the breasts in the female. These tumours are sometimes large, hard, and somewhat painful; but, in this climate, are seldom either very painful or of long continuance. The pyrexia attending this disease is commonly slight, and recedes with the swelling of the fauces; but sometimes when the swelling of the telticle does not succeed to that of the fauces, or when the one or the other has been suddenly repressed, the pyrexia becomes more considerable, is often attended with delirium, and has sometimes proved fatal.

As this disease commonly runs its course without either dangerous or troublesome symptoms, so it hardly requires any remedies. An antiphlogistic regimen, and avoiding cold, are all that will be commonly necessary. But when, upon the receding of the swellings of the telticles in males, or of the breasts in females, the pyrexia comes to be considerable and threatens an attack of the brain, it will be proper, by warm fomentations, to bring back the swelling; and by vomiting, bleeding, or blistering, to obviate the continuance of its absence. See Cullen, First Lines, § 332.


Gen. Ch. Cal. Perianth one-leaved, five-toothed, or five-parted, or five-leaved, small, permanent. Cor. monopetalous; tube generally very short; border nearly flat, five-parted; divisions long, oblong, acute. Pet. surrounding the organs of impregnation, nearly cylindrical, five-parted, furnished with five membranous appendices which have a kind of two-celled bag defined to receive the protruding pollen-masses. Fil. Germin superior, oblong, two-cleft; ifytes two, sometimes only one, or none, short; tagma fingle, common to both fytes, or both germi, abrupt, very thick, pentangular. Stam. Five two-lobed glands seated on the angles of the tagma, and producing in each of their cells a mass of glutinous pollen, which finally protrudes with a very slender pedicel, and is received into one of the cells of the appendages to the nectary. Peric. Follicles two, oblong, acuminate, one-celled, opening lengthwise. Seeds numerous, oblong, crowned with a down, imbricated on a free receptacle.

Eff. Ch. Corolla contorted. Nectary cylindrical, divided upwards into five segments, and furnished with five membranous appendices, which receive the pollen masses of the anthers, into as many two-celled bags.

Obf. The complex and peculiar structure of the flower in this genus, and some others nearly allied to it, has occasioned much perplexity to the botanists, and has been differently understood by different authors. The appendices to the nectary bear a great resemblance to filaments, they have accordingly been so called by Linnaeus and others, and their two celled bags have in consequence been considered as real anthers. But Dr. Smith observes, that the pollen...
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is neither attached to, nor secreted by these cells, but is produced in five pairs of glutinous masses, exactly like the pollen of the orchid, from five glands excited upon the figures, so that no plants can be more certainly gynandrous.

C. Stem twining, pendulous, leafy. Whole plant silky. Stem several, from three to six feet high, about the thickness of a goose-quill, greenish, smooth, twining about each other, or on neighboring support, and then sometimes rising to the height of ten or twelve feet, with opposite branches on their upper part. A native of the Cape of Good Hope; and of Egypt, if the reference to Alpinus be correct, but La Mare thinks it dubious. 2. C. ptyrostachium. Lam. Syn. Fl. Arg. 53. n. 79. *Stem twining, pendulous, leafy.* Whole plant silky. Stem several, from three to six feet high, about the thickness of a goose-quill, greenish, smooth, twining about each other, or on neighboring support, and then sometimes rising to the height of ten or twelve feet, with opposite branches on their upper part. A native of the Cape of Good Hope; and of Egypt, if the reference to Alpinus be correct, but La Mare thinks it dubious. 2. C. ptyrostachium. Lam.

10. Tab. peduncled, leafy. Whole plant silky. Stem several, from three to six feet high, about the thickness of a goose-quill, greenish, smooth, twining about each other, or on neighboring support, and then sometimes rising to the height of ten or twelve feet, with opposite branches on their upper part. A native of the Cape of Good Hope; and of Egypt, if the reference to Alpinus be correct, but La Mare thinks it dubious. 2. C. ptyrostachium. Lam.

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bull-shaped, shorter than the corolla, divided about two-thirds of its length into five lanceolate, acute segments, so far removed from each other as to admit five other very small rounded segments, sometimes quite entire, sometimes lacerated or bifid; sheath conical and narrow at the base, thence widening and divided into five two-celled, oblong appendices ending in as many rounded scales, and embracing the mouths of the stigma. Jacq. *Follicles* diverging horizontally as they approach to maturity, cylindrical, acuminate, smooth; receptacle linear, membranous, free. *Seed*, several, imbricated downwards, ovate-oblong, somewhat compressed, with a narrow membranous edge and a lateral umbilicus, reddish-ferruginous, crowned with a tuft of silky-white hairs five times the length of the seed. Germt. The silky globs may be easily cleared from its seeds by contusion, and affords an excellent flake, which may be adapted to various purposes. The more this flake is carded the finer and more buggy it becomes, yielding a good warm down, and by its lightness and elasticity, particularly fit for linings or wadding to forlets and cloaks against the frost. In carding it will not easily mix with cotton, but it thus acquires a greater confidence and might perhaps be capable of being spun. Tooke's View of Ruffn. vol. ii. A native of Spain, Sicily, and the neighbourhood of Aitracan. 18. C. _planiflorum_. Lam. Syl. Nat. 6. Matt. 50. Mart. 3. Lam. 2. Willd. 8. Jacq. Am. 52. tab. 35. pect. 44. tab. 81. "Stem twining; leaves cordate, smooth, downy underneath; peduncles somewhat racemose, milky." Root perennial. Stems cylindrical, smooth. Leaves oblong-cordate, acuminate, quite entire, very soft; beard at the origin of the petiole with very short, stiff, ferruginous hairs. *Flowers* without scent, had an inch in diameter, very flat; common peduncles smooth, lateral, solitary; with about five flowers on elongated pedicels; calyx five-leaved; leaflets lanceolate, acuminate, flat, widely spreading, thinly coloured, generally longer than the corolla; tube of the corolla very short, spreading; border with five ovate-rounded, widely-spreading, flat divisions; nectaries five, connected at the base, so as to form one body of the same form and size as the tube of the corolla; producing from their base in the centre of the flower five blunt, upright little appendices, twice as long as the tube of the corolla, furnished at the top with cowed, two-celled, little membranes; pollen-masses in pairs, on short capillary pedicels, inversely egg-shaped, obtuse, columnar, upright, concealed by the caws; gemens the length of the tube of the corolla; *Stylus* short, upright; *Stigma* very large, cloven in the centre, funnel-shaped. A native of New Spain about Carthagena. 19. C. _rostratum_. Mart. 19. Willd. 9. Vahl. Symb. 3 45. "Stem and pedicels bristly; leaves cordate-oblong, divisions of the corolla lanceolate, flat." *Stem* twining, rough with reverberated bristles. *Leaves* two or three inches long, opposite, acuminate, base with thinly feathered hairs on the upper surface, paler underneath, flodded with numerous raised dots visible only through a lens, with a finely open, not cloved as in C. crispiflorum. *Pedicels* axillary, shorter than the petiole, smooth; pedicels four or five, somewhat umbelied, unequal, filiform, bristly, often twice the length of the pedicule, shorter than the leaves; segments of the calyx ovate, base with thinly feathered hairs; corolla, before it expands, ovate, acuminate-beaked; when open, three times the length of the calyx, with a few hairs on the outside. 20. C. _tormentosum_. Lam. 11. "Stem twining, downy; flowers somewhat cordate-oval, mucronate, downy underneath; umbel with about five flowers." _Stems* woody, cylindrical, cottony, whitish. *Leaves* opposite, on short pedicels. _Umb._ vol. x.
the corolla. A native of South America, in Tierra Bomba, on the coast. 25. C. altifolium. Mart. 24. Lam. * Jacq. Amer. 64. tab. 57. Pict. tab. 82. "Stem twining; leaves cordate, downy on both sides; flowers umbellifered." Milky. *Stems cymal; when old, woody, climbing trees to the height of fifty feet, smooth, ash-coloured, leafless; when young, green, downy, leafy. Leaves at: first two inches, afterwards half a foot long, quite entire, thickish. Umbels lateral, foliaceous, close, hemispherical; common peduncle very thick, cylindrical, downy, scarcely the length of the petals; involucre many-cleft, unequal. Flowers thick, firm, without aec; calyx greenish, all colour; corollas dirty purple. *Foliicles one abortive. A native of New Spain, about Carthagena. 26. C. radiatum. Lam. * (Aclepia; Forl. H. p. 49. 67.) "Stem erect, fragrant; leaves cordate, acute, unlobed; umbels terminal." A native of Egypt. 27. C. faberiiform. Linn. Sp. Pl. 2. Mart. 6. Lam. 6. Willd. 14. (Periploca carolinensis; Dill. all. 300. tab. 239. fig. 226.) "Stem twining, rough with hairs; leaves oblong-cordate, acuminate; corymb axillary; segments of the corolla lanceolate." Root perennial. *Stems slender, covered on the lower part with a thick fleshy bark resembling cork, full of fissures; twining above, and, if supported, rising to the height of six or seven feet. Leaves two at each joint; on long hairy petioles. Flowers green at first, afterwards dull purple. A native of Carolina. 28. C. carolinense. Willd. 15. Jacq. ic. 2. tab. 342. Collec. 2. 26. "Stem climbing, rough with hairs; leaves oblong-cordate, acuminate; corymb axillary; segments of the corolla oblong, obtuse." A native of Carolina. 29. C. obliform. Willd. 16. Jacq. ic. 2. tab. 344. Collec. 1. tab. 148. "Stem twining, rough with hairs; leaves obvate-cordate, acute; corymb axillary; segments of the corolla ovate, acuminate." Leaves fragrant. Segments of the corolla oblique, revolute at the edges. A native of Carolina. 30. C. hirtum. Linn. Sp. Pl. 3. Mart. 7. Lam. 7. Willd. 17. (Periploca feandens; Plum. Sp. 2. Apocynum feandens virginianum rugosum; Moris. H. l. 3. 611. § 15. tab. 3. fig. 61.) "Stem twining, shrubby, cork-barked and chinked towards the bottom; leaves ovate-cordate. Stem rising to the height of twenty feet or more, if supported. Leaves on long, smooth, petioles. Flowers yellowish-green. Sent to Miller by Houton from Jamaica. 31. C. cirripetum. Ait. Hort. Kew. 1. 303. Mart. 16. Willd. 18. Swartz Prod. 52. (Periploca cirripetum cirripetum; Plum. ic. 210. tab. 216. fig. 1.) "Stem twining, leaves fragrant underneath, oblong-cordate; hairs cloven; petals curled at the tip." A native of South America and the West Indies. 32. C. prostratum. Mart. 21. Willd. 19. Cavan. H. p. 7. n. 7. tab. 7. "Stem prostrate, fome what herbaceous; leaves reniform-cordate, acute, downy underneath." *Stems a foot high, cylindrical, fihform, branched, knotted, downy. Leaves nearly equal to the peduncles, quite entire, soft, with an unpleasant smell. Flowers in axillary umbels; common peduncles half an inch long, between the two pediies; rays four, one-flowered, furrowed at the base by three little bracteae; calyx small, divided half way down into five ovate fragrant segments; corolla deep green, deeply divided into five spreading divisions, with a revolute border; nectary whitish, pitcher-shaped, with five deeply two-horned segments; appendages two from the centre of each horn; one arched towards the stigma; the other very small, opposite to the former, verging outwards. A native of Mexico. 33. C. monspessulanum. Lam. Sp. Pl. 4. Mart. 8. Lam. 8. Willd. 20. Cavan. H. p. 44. tab. 60. (Periploca monspessulanum, folio rotund-orbiculare; Tourn. 93. Scammonia monspessulana; Bauh. Pin. 204. Apocynum. / 4-latifolium; Cluf. Hift. 1. 126.) "Stem twining, herbaceous; leaves reniform-cordate, acute, smooth." Stems very long, swelling at the joints, green, smooth. Leaves about the length of the pediies, glaucous. *Flowers on solitary peduncled racemes, between two petioles; calyx small, five-cleft; corolla deep yellowish; segments linear, white above, pale rose-coloured underneath; nectary whitish, pitcher-shaped, ten-cleft, with five broad shorter segments and five acute longer ones, furnished internally with as many acute appendices, which are raised upwards, heath in the middle of the nectary, obliquely five-cornered, with five pendulous two-celled appendage little bags, ending at the top in as many orbicular scales, converging towards the top of the heath; pollen masses in pairs, globular, on very short capillary pedicels; stigma crowned by two little teeth, approximating at the base, afterwards diverging. Cav. The milky juice of this species thickens when dry, becomes blackish, and resembles the true feommony in its purgative qualities; but it is not equally strong. A native of the south of France and Spain. 34. C. extenuum. Ait. Hort. Kew. 1. 303. Mart. 9. Willd. 21. Jacq. ic. 1. tab. 54. Mfc. 2. 353. (C. cordifolium; Retz. Obs. 2. 15.) "Stem twining, shrubby; leaves cordate, acute; peduncles elongated; pedicels fihform; corollas bristly at the edge; folicles ramentaceous." Root annual, divided into whitish fbera a foot and half long, and not so thick as a quill, milky. Stem twelve feet high, cylindrical, fragrant, with longer hairs thinly interfering from the sides; flowers nearly black; rootlets, which can hardly be distinguished from the fowers, of a greenish, finely tinged with purple. Leaves quite entire, almost smooth on both sides, on a long, cylindrical, fragrant petiole. Flowers of a pale-greenish colour, pendulous, with fme-fmedling, opening about to the evening, and closed by morning; common peduncles between the opposite petals, generally single, but sometimes one on each file, from half a foot to a foot long, cylindrical, ragged, fragrant, spreading; pedicels an inch and half long, coming out aggregately at intervals; calyx small, somewhat fragrant, with five lanceolate, acute, erect divisions; corolla wheel-shaped; tube somewhat five-angular, longer than the calyx; divisions of the border three times the length of the tube, lanceolate, acute, flat, but rolled back at the sides, spreading; nectary a sheath attached to the tube of the corolla, elevated into a pentagon five-grooved white cone, shorter than the corolla, which consists of five erect obtuse scales, three-lobed at the tip, the middle lobe longer and lying on the vertex of the stigma, with a small two-celled bug for the bag, and on the back of the bag, a lanceolate convex appendix, beat both ways, acute, erecting itself from the middle of the heath beyond the stigma; pollen-masses in pairs, irregularly egg-shaped, compressed, yellow, pendulous, on short pedicels. Stigma capitate, globular, with an obtusely five-cornered rim about the edge. Folicles lanceolate, acuminate, nuniculated, turgid, glaucous, coriaceous, diverging or reflexed. A native of the East Indies. 35. C. afternum. Mart. 18. "Stem twining, shrubby; leaves cordate, acute, rough; flowers lateral." Stem twenty feet high or more, very fnder, armed with small fhirnging hairs. Leaves in flliant pairs at each joint, on fnder pedicels. Flowers in small clusters, ftted close to the flsks, rather large, yellow, fjar-shaped, spreading open to the bottom. Folicles long, swelling. A native of La Vera Cruz, in New Spain; raised by Miller from seeds sent by Dr. Houtou. 36. C. adfaltifolium. Mart. 28. Dr. Cochini. 1. 166. (Floren. 5. Siamus, five flos Tubulifl.; Rumph. Amb. tab. 25. fig. 1.) "Stem twining, cork-barked, and chinked towards the bottom; leaves heart-shaped, acuminate, wrinkled; cymes reflexed."
flexed." Root perennial. Stem very long, cylindrical, and smooth in the upper part. Leaves undulated, smooth, opposite, on long petioles. Flowers yellow, very sweet-scented; cymes large, hemispherical, axillary, reduced; calyx five-lobed; leaves ovate-lanceolate, undulated, nearly erect; corolla valvate; tube thick, short, inflated at the base; border large, with five oblong somewhat reflexed divisions; nectary cylindrical, thick, erect, with five concave segments; appendages five, membranous, adhering to the outside of the nectary, and terminated by compressed, acute, two-celled bags incumbent on the stigma; stigma fleshy, ovate, emarginate. A native of Siam and Cochinchina, cultivated about Canton. In fragrance it does not yield to jasmineum fambac, and though very common is not left used by women of the higher rank as an ornament to their hair.

37. C. inodorum. Lour. Cochinch. 166. "Stem twining, cork-barked, and chinked towards the bottom; leaves ovate-acuminated; peduncles subdivided." Root perennial. Stem long, branched. Leaves smooth, opposite. Flowers numerous, small, yellow, scented; peduncles very short; corolla valvate; tube, spreading; stigma large, fleshy, ovate-oblong. Follicles oblong, acuminate, downy, curved inwards. A native of Cochinchina. 38. C. erectum. Lam. Sp. 5. Mart. 14. Linn. 9. Wildt 25. Jacq. Hort. 1. tab. 18. Míc. 1. 20. tab. 2. fig. 1. (Apocynum folio subrotundulo; Bauh. Pin. 302. Tourn. 92. A. 1. latifolium. Clus. Hift. 1. 124.) "Stem erect, divaricating; leaves cordate, smooth." Root perennial. Stems several, about three feet high, slender, somewhat branched. Leaves opposite, petiolate, ending in a point, inclining to glaucous. Flowers small, white; in lateral, lax, branched corymb; calyx green, small, ciliated, five-cleft; segments lanceolate, acute, erect; corolla white, divided almost to the base into five, oblong, obtuse, flat segments, forming at the bottom an almost bell-shaped corolla, but spreading much at the top; nectary a sheet placed immediately on the pedicel of the flower, cylindrical, green, two-grooved near the bottom; putting out from the back, about the level of the germ, five, small, white, petal-shaped, somewhat linear, upright leaflets; dividing afterwards into five oblong, concave, yellowish segments, ending in a roundish scale, applied to the stigma, and about half its length, not furnished with two-celled bags, but having instead of them two roundish, yellow, small plates, situated above the base in a parallel position, and extended forward; germs two, obtuse, pale; style very short, thick, fleshy, and undivided, common to both germs; stigma very large, elongate-conical, thick, erect, pale yellow, broad and obtuse at the end, very long; anther-glands five, at the sides of the stigma in the middle, from each of which protrudes a pair of yellow, obovate, flat, pollen masses, almost without pedicels, hanging forward between adjoining plates of the nectary. A native of Syria. 39. C. arborescens, Lam. Forst. Ægyp. 53. n. 80. "Stem twining; corolla rotate." A lofty tree, not milky. Flowers green. A native of Egypt.

C. venulosa: Lam. See Asclepias Aphrodisia.

Propagation and Culture.—C. acutum and C. monspeli- cumum, being natives of the south of Europe, are hardy, and propagate too fast by their creeping roots; they may be transplanted any time after the leaves decay, till they begin to shoot in the spring. C. erectum and C. tuberosum will live in the open air in England, if planted in a dry soil and warm situation. The former may be increased by parting the roots in the spring; the latter by laying down the young shoots about Midsummer, which may be transplanted in the autumn. The natives of the Cape must be preferred in the dry floor, and may be increased by layers, cuttings, &c. Those of the tropical climates require a warm house all the year, and must be allowed only a little water in winter; they may be propagated by laying down the young shoots, which, in three or four months, may be transplanted into pots filled with light sandy earth, and plunged into the tan-bed.

CYNANTHREMUM, a name given by some authors to the Antheismis Cotula, or flinking May-weed. Ger. Emac. Ind. 2.

CYNANTHROPIA, from κυν, dog, and θρόπο, man, a term used for madneds given by a dog, wherein the patient avoids light, or any thing bright, fears water, and trembles at the light and remembrance of it. It proceeds usually from a poisonous bite, or the like, of some mad creature, as a dog, a wolf, &c.

CYANIPUM, in Botany. See Æthusa.

CYNARA, according to Linnaeus, from κυν, canis; but the derivation is altogether uncertain. The French botanists spell it cynara, as it is found in some Latin authors.) Linn. Gen. 928. Schreb. 1577. Wildl. 1436. Juss. 1753. Vent. 2. 498. Clafs and order, fyngefsa pol-ygama equalis. Nat. Ord. Composite capitate; Linn. Cinnaecophalae; Jull.

Gen. Ch. Cal. common, very large, dilated towards the base, imbricated; scales numerous, large, fleshy at the base, ending in a more or less prickly point. Cor. Florets all perfect, nearly equal, funnel-shaped; tube very slender; border erect, ovate, five-cleft; divisions linear, one of them more deeply separtated. Stem. Filaments five, capillary, very short; anthers united into a tubular cylinder, the length of the floret, five-toothed. Pfyl. Germ somewhat ovate; style filiform, longer than the flamen; stigma fleshy, oblong, emarginate. Peris. The permanent common calyx a little converging. Seeds solitary, oblong-ovate, four-cornered, compressed; down fleshy, long. Recap. brilly, more or less thick and fleshy.

Eff. Ch. Calyx dilated at the base, imbricated with somewhat fleshy scales; receptacle more or less thick and fleshy.

La Marck observes that this genus really differs from carduns only in the fleshtines of the scales of the calyx, and the thickness of the receptacle; since the emarginate termination of the scales with a point in the middle, though infected by Linnaeus, occurs only in the first species, and must therefore be excluded from the generic character.

entire. Flowers terminating the stem and branches, on thick fleshy peduncles; common calyx globular, three or four inches in diameter; scales thick and fleshy at the base; tongh, membranous, and fringr above; deeply and widely notched at the tip, with a strong point between the segments; florets purple or blue. A native of the south of Europe. In its wild state it is said to be taller, more downy, and more spinous, than it appears in our kitchen gardens, but to have smaller heads. It has long been cultivated in almost every part of Europe; but in England, at least, rather as a luxury than as a profitable euculent. With us the heads, in their immature state and before the flowers open, are boiled in salted water, till all such parts of them as are soft are capable of becoming so. The scales of the calyx are then plucked off one by one, the lower part of them dipped in a mixture of melted butter and pepper, and the fleshy substance sucked from the rest. But there is generally so little to be obtained, as almost to justify the observation of a raw country fervant, who having waited a supper when artichokes made one of the dishes, was eager on his return into the kitchen, to taste a kind of food which he had never seen before; but, to his great disappointment, finding little more than a kind of hornless substance, which equally defied his tongue and his teeth, declared with great naiveté, that gentlemen seemed to him to have strange fancies, for as far as he could discover, one leaf would do as well to lick up the butter as a thousand. It was fortunate for him that he did not encounter what is emphatically styled by Englishmen the choke, from a not ill-founded perfumption that any unhung wight who should happen to get it into his throat would certainly be choked. This consists of the unopened florets and bristles which hang upon the receptacle of the compound flower, and must be carefully cleared away before the epicure can arrive at the receptacle itself, the bottom, as we call it, or le cul, as it is more elegantly termed by our polished and refined neighbours on the other side of the channel, which is undeniably the most plentiful, as well as the most delicate part of the viand. On the continent, artichokes are more generally used, and are also eaten raw with salt and pepper. It is moreover esteemed a branch of good housewifery, to preserve them as a valuable part of the family winter store.

For this purpose various methods have been devised; but the best is laid by Parmentier to be that which is practiced at Lyon and in its neighbourhood. The heads are first half boiled and stripped of the calyx-leaves and the choke; the bottoms while they are still warm, are then plunged into cold water, which gives them a refinement, or as it is there expressed, blanches them. They are afterwards laid upon flat pieces of wicker work, and put four times successively into an oven in which bread has been baked, where they are kept till it has gradually cooled. By this process they become thin, hard, and transparent as horn, and do not return their primitive appearance till they have been steeped in warm water. When they are once thoroughly dried in the oven, nothing farther is necessary than to keep them in a dry place, that they may not grow mouldy. To obtain a pound of these preferred bottoms about forty heads of a moderate size must be expended.

Mr. Miller has mentioned two kinds, which he thought different species, but which appear to be only permanent varieties. 1. C. scolymus, the green or French artichoke. 2. C. horstii, the globe artichoke. The first has the scales of the calyx remarkably open; its head draws up rather to a point in the middle; the leaves are larger, much wider, of a paler colour, and inclining to yellow on the under surface terminated by short spines; the bottoms are not so thick of flesh, and have a perfumed taste, which is not generally agreeable, so that it is not much cultivated by our gardeners. The second, which is our common artichoke, has its calyx-leaves turned inwards at the top, and its head rather flat; its leaves are of a bluer cast, and are more deeply cut, with no, or only small and scarcely perceptible prickles. John Bauhin had long before observed that the presence or absence, the abundance or the rarity of spines are merely characters of personal varieties which are often produced indiscriminately from the same seeds. In France, where artichokes are in more general use, there is a greater number of varieties. Parmentier mentions five principal ones. 1. The white, distinguished by the strong spines of its calyx leaves, is the earliest and the smallest kind; but it is also the most tender, and with difficulty kept alive through the winter in the most favourable situation and soil, it is but little propagated. 2. The green, which is mild in requir in the French green markets, grows to a great size. Its form is more flat, and its scales more open than in the other varieties; its bottom is sometimes five inches in diameter, and the flesh very tender and well tasted, when it has been boiled in a good deal of water. 3. The yellow, which has more a pointed head than the preceding, and scales with a small sharp spine, and a tinge of violet at their extremity, is as good and as tender as the green, but being smaller, is not so profitable to the grower. The French artichoke of Miller seems to be an intermediate variety of these two. 4. The red, which has entirely a red-purple exterior, with a yellow and more delicate flesh than any of the former kinds. It is always eaten raw, and that only when it is very young, as it soon becomes hard and stringy. 5. The fleshy artichoke of Genoa, so called from its remarkably sweet taste. It is eaten raw like the red, and is even thought more delicate, but as it degenerates in the second year, and mull therefore be annually renewed by fresh brought from Genoa, it is found in but few of the French gardens.

This species has obtained a place in the Materia Medica, and has been recommended for its diuretic qualities, but is now little used. The whole plant has a strong bitter taste and a peculiar smell. The flowers are used to curdle milk, and have lately been found to afford so much of the tanning principle as not to be inferior to white galls. 2. C. horrida. Aiton. Hort. Kew. 3. 148. Mart. 2. Wild. 3. "Leaves pinnatifid, downy underneath, spinous; spines at the base of the leaves, and of the pinnae commate at the base." Found by Maffon in the island of Porto Santo, near Madeira; and introduced at Kew in 1778. 3. C. cardunculus. Cardoon, Linn. Sp. Pl. 2. Mart. 3. Wild. 4. (C. fylveiris 8. Lam. C. spinosa, caudapediculis, ctintauru; Bauh. Pin. 305.) "Leaves spinous; all pinnatifid; calyx-scales ovate." Bauhin affirms that this is either a hybrid plant, or a feminable variety of the first species. La Mare makes it a variety of his fylveiris, to which he refers capsi. Bauhin's C. fylveiris latifolia, quoted by Linknus and other authors as a synonym to C. foelymus. He gives the following description of the wild plant, which he says is native of the south of France, Spain, Italy, and Sicily. "Very spinous; leaves somewhat hairy, finely cut; spines long, flaeviuscent." Stem four or five feet high, upright, thick, cottony, a little branched, spinous near the top by means of the upper leaves, which are slightly decurrent and very spinous at the base. Leaves large, winged; pinnules decurrent, narrower than those of the first species, furnished with a long yellowish spine at the extremity of each segment; pale green above, very white and cottony underneath Flowers blue, terminal, smaller than those of the common artichoke; calyx-scales somewhat fleshy,
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Fleshy, terminated by a very sharp and rather long spig. It is much cultivated for the table in many parts of the continent, but is not much esteemed in England, and not often raised. The roots, and the flasks with the midrifs of the leaves are the only parts that are eaten, and chiefly the latter, which are thick and crisp, and though naturally bitter, are rendered mild and pleasant by being blanched like celery. They are eaten either alone, or as a sauce to animal food, and especially roast meat, and are often introduced as a dish in the second course. But the cultivation of them is so troublesome, and after all so much depends upon the skill of the cook to render them very palatable, that they are almost confined to the upper ranks. In France the flowers carefully dried in the shade, are used by the country people as well as those of the common artichoke, to consolidate milk for the purpose of making cheese. 4. C. integrifolia. Mart. 6. Willd. 1. Vahl. Symb. 7. Vahl. Symb. 1. 48. "Leaves lanceolate, finely toothed; calyx scales lanceolate-acuminate." A low smooth plant with a simple, fiddle-shaped stem. Leaves an inch and half long, petiolate, mucronate, toothed with remote small spines. Flower blue, terminal, solitary, peduncled, only half the fize of that of C. follymus; lower calyx-scales terminated by a weak spine. A native of the mountains near Toledo in New Califue. 5. C. humilis. Linn. Sp. Pl. 3. Mart. 4. Lam. 3. Willd. 5. Desf. Atl. 2. 248. (C. fylkeldriaeisic; Cluf. Cuf. 35. Carduus tingitanus; Piik. Alm. 85. tab. 81. fig. 2. C. humilis tingitanus; Morif. Hift. 3. 1. 88. § 7. tab. 32. fig. 9.) "Leaves spinous, pinnatifid, downy underneath; calyx-scales awl-shaped." 6. Carduus andelusiacus; Piik. Alm. 85. tab. 18. "Lower leaves a foot long or more, three or four inches broad, inserted on the ground, cut on each side to the midrib into pinnatifid, rather narrow, pointed pinnales, with each of their segments ending in a flow' spii. Spine erect, scarcely longer than the root-leaves. Flower terminal, large, blue; calyx-scales oval-lanceolate, terminated by a sharp point. A native of Spain and Barbary. 6. C. acutil. Linn. Sp. Pl. 4. Mart. 5. Lam. 4. Willd. 6. Desf. Att. 2. 249. tab. 223. Lam. Ill. Pl. 60. fig. 2. (C. acutil tunet ana faiga-lieis; Tile. Pf. 41. tab. 20. C. orientalis noci- chata; Tourn. Cor. 51.) "Stemfles; leaves pinnate, without spines, smooth above." Linn. "Stemfles; leaves without spines, downy underneath, pinnatifid; segments incife-toothed; calyx-scales lanceolate, fcarious and toothed at the tip. Willd. A native of the coast of Barbary near Tunis, and of the Levant. Obf. Jaffuei has observed that C. humilis, having a radical flower, and calyx-scales not spinous, but dilate-palmate at the tip, like the jacces, ought to be referred to another genus. But did he not mean this species? 7. C. glomerata. Willd. 7. Thumb. Prod. 141. "Stemfles; leaves pinnatifid, spinous." A native of the Cape of Good Hope. 8. C. faxilisa. Willd. 8. "Stemfles; leaves pinnate, nearly smooth; segments toothed, spinous; inner calyx-scales fcarious at the tip." Flowers an inch and half or two inches long, green on both fides, unequally pinnated, blitely on the midrib. Flowers an inch and half long, felle; calyx cylindrical; outer fcales ovate, toothed at the tip; teeth terminated by a spine; inner ones ovate, quite entire, furnished with a fingle spine at the tip; innermost oblong, fcarious and without a spine at the tip. A native of Spain.

CYNARA, in Gardening, comprehends plants of the hardy perennial and biennial kinds; of which the species cultivated are, the common artichoke (C. follymus) and the cardoon artichoke, or cardoon (C. cardunculus).

Method of Culture.—These different plants are increased without much difficulty, if proper care be taken to preserve them from the frosts in winter season, by some protecting material.

Method of Culture in the Artichoke Kind.—These are a fort of plants which succeed best in a soil of the light, deep, friable, loamy kind, well enriched by fable dung, or some other manure. Where the soil is light and wet, they are liable to be destroyed in the winter season by the stagnation of moisture about their roots.

Their propagation is most commonly effected by planting the offsets, or suckers produced from the old stools or roots, in the early spring months, as about the latter end of March, in an open situation, in rows four or five feet apart, and the same distances in the rows. The ground should be previously prepared by trenching in the dung to a good judge's depth or more.

In the business of planting out the offsets, after being separated from the old plants, they should be trimmed in their leaves and other parts, and be then put in by means of a line and dibble to the depth of three or four inches. Some plant two or three plants in one place, but others only one. The latter is probably the better method, as the plants spread very much. Whenever mode is practised, the earth should be well closed about the set, and a good watering immediately given, especially if the weather be dry; repeating it as there may be occasion afterwards.

After this they only require to be kept free from weeds during the summer, which is best performed by hoeing between the rows with a large sharp hoe; and to be protected from frosts in the winter months.

Whenever large heads are wanted, all the small lateral ones should be removed as soon as they are formed to any fize. In some situations, the small lateral crooked heads are, however, held in much esteem, consequently must not be rubbed off. The maturity of the heads of the artichoke is shown by the plates or scales separating from each other considerably, and appearing of a brownish color.

In separating or cutting the heads, six inches of the stem should be preferred to them, and in many cases, when for market, a foot or more. And care should be taken, that as the heads are cut, the flasks be broken down to the bottom and removed, in order to promote the growth of new suckers for offsets.

With the view of protecting the plants during the winter from being injured by frosts, it is the practice of some gardeners to earth or mould up the rows of the plants, so as to cover their crowns, forming the earth into a ridge. This is usually done about the latter end of November, or beginning of the following month, the lower leaves being cut and removed before the work is attempted. The author of the "Scotch Forcing Gardener," however, instead of ridging up the plants, advises that they should be carefully covered with flake-dung or other litter in the beginning of winter, which he considers as much better than digging trenches and moulding up the earth from them, as the roots in that way are, he supposes, doubly exposed. Many instances have occurred where the plants managed in that method have been destroyed, while those well covered by litter have not sustained the least injury.

About the middle of March, or beginning of the following month, when the plants have begun to shoot, the ridges where that method has been employed, should be levelled down, removing all the unnecessary shoots, only leaving one or two on each plant. This work should be performed when the weather is dry, and the mould be well cleared and removed from the crowns of the plants.

But where they have been covered with litter, the earfe parts should be removed about the same time; and the more reduced.
CYN

reduced and rotten parts dug in; previously removing the shoots, as in the former case, to prevent their being too much crowded and producing small imperfect heads.

This is a sort of culture which must be repeated every year, for the old roots or floots, which should not be suffered to continue more than ten or eight years in the same situation, as they then begin to produce heads that are smaller in size, and where succussions of this sort of crop are wanted, a few of the best offsets should be planted every year as soon as possible, after being taken off, in the manner that has been directed above. This practice not only keeps up the flock of plants, but continues the feast of having the produce, as the young plants afford their heads much later than the old ones.

When it is necessary that the offsets should be conveyed to a distance, they should be carefully packed, eight or ten together, when dry, and bound round with a hay-band, the whole being then placed in a hamper or mat. In this case, some advise moistening the roots before planting them out in the garden.

The globular-headed sort is, in general, found the largest and most flethy, but the green conical-headed the most hardy, and best capable of redefining the effects of severe feaons.

Method of Culture in the Cardoon Kind.—This is readily accomplished, in this sort of plants, by favoring the seeds in the latter end of April or beginning of May, or later, in the places where the plants are to remain. It is best done by forming trenches at the distance of about five feet from each other, in the manner directed for celery, to the depth of a good spade, placing the mould on the fides or inter-
spaces; then to point in with a spade a little well-rottled compost manure in the bottoms, and make a small drill in the centre, to the depth of an inch, dropping in the seeds two or three inches apart, covering them with the fine mould: a little water should be given at the same time, when the feaon is dry and hot.

When the young plants have advanced two or three inches in their growth, they should be thinned out to the distance of ten or twelve inches, and gradually to much greater distances. And as they proceed in their growth, they should be gradually moulded up when dry, in order to be blanched, and rendered tender, in the same manner as practiced for celery; only the leaves being carefully gathered, and tied together each time with a little old mat-
ting, in order to prevent the mould from getting between them and causing their decay.

It is likewise the practice with some gardeners to raise the plants on beds, and afterwards transplant them into drills, or holes, where they are to remain and be earthed up for blanching; but it is probable that the former is, in molt cafes, the preferable practice.

With the view of having a longer succussion of these plants, the moulding up should be performed at different times, from about the beginning of September, at the dis-
tance of a fortnight or three weeks.

These plants are found to succeed best on such soils as are of the more deep sandy loam kinds, which have not been much enriched by manure from long cultivation.

With the view of favoring feed, some of the best plants should be suffered to remain without being blanched, and be protected by litter during the winter; and in the spring they will shoot up into flower, and produce ripe feed in the autumn, which should be carefully preferred.

The flethy parts and roots of the cardoon are capable of being preferred in the winter seafon, in the same manner as the carrot, celery, and other similar plants, which have large thick roots.

CYNARA, in Ancient Geography, a name given by Pliny to an island of the Aegean sea.

CYNCHRAMUS, in Ornithology, a name given by Al-
drovand and Blifion to the Emberiza Flitaria, which see.

CYNDONIS, a river of the Hellespont. Hefychius.

Also, a river of Greece, in the Peloponnese.

CYNES, or CINAE, in Biography, a minister of Pyr-
hus, king of Ephris, more distinguished by his talents than by force. He had been instructed in oratory by Demo-
thenes, and in military tactics by the most celebrated officers in Alexander's army. So remarkable was he for the art of persuasion that his sovereign used to compliment him with having gained more towns by his eloquence, than he could ever have conquered by force of arms. He was indeed an enemy to war, as the curse of mankind, when undertaken for the gratification of ambitious projects: he was of the Epicurean sect, and was perpetually urging upon the mind of his king the maxim, "That no addition to his territory; no augmentation of his power, could add one ingredient to the happiness already within his reach." Pyrrhus, how-
ever, was a warrior and a king, and not a philosopher; he determined on conquest, and forced upon his minister a chief command. After a decisive victory over the Romans in the year B. C. 285, Cynes proposed to negotiate, the king conferred, and sent him to Rome for the purpose. In this he was unsuccessful, and on his return, he told Pyrrhus that the Roman senate seemed to him an assembly of kings. Cy-
neas made a second attempt but with no better success than before. He was afterwards dispatched to Sicily, and pre-
pared the way for his master's reception in that island. From this period no more is heard of Cynes: he is re-
corded by Pliny and others as a most extraordinary instance of the powers of memory; he is said to have been able, the day after his arrival in Rome, to salute all the senators and knights by their names. As an author, he is mentioned by Cicero, as having in conjunction with the king, his master, composed a treatise on the military art. He abridged also the "Tactics" of Xenæs. Univer. Hist. Moreri.

CYNES, the name with Cenciled.

CYNEGETICA, in Ancient Geography, a name given by the Greeks to a mountain of Africa, on the tract of Her-
cules, opposite to that of Europe; and both together were called the Columns of Hercules.

CYNEGETICS, from κυνηγός huntman, of κυνος dog, and γείτ, I eat out, books treating of the art of hunting.

Gratiss Falisius has written a Cynegistica with applaue.

CYNÉGICA REGIO, in Ancient Geography, a country of Afra, in Syria, placed near the town of Antioch.

CYNESII, a people of Iberia, or Spain, called also Cy-
neta; lumped to be that part of Lusitia which is now de-
nominated Algirave.

CYNETIA, a town of the Peloponnesus in the Argolid.

CYNETICUM JUGUM, a mountain of Spain on the coaft of the Mediterranean sea, and near the river Ana.

CYNIA, a town of Ephris, in Arcania. Strabo.

CYNICS, a sort of ancient philosophers, who valued themselves on their contempt of every thing, especially riches and flates, arts and sciences; all excepting morality.

The founder of this sect is said to have been Antithenes, a disciple of Socrates; who, after his master's death, quit-
ting the Pyrrhus, retired to Cynofarges, a kind of academy not far from the gates of Athens. See Antithenes.

Hence, some will have it, came the name κυνος, κύνειος, viz. from cynofarges. But others, with more probability, denote
derive it from κεφαλή, dog, because of their severity and importunity in reprehending vice. Thus Aristotle observes, τὰ ἐπὶ κεφαλῆς, &c. the Cynics were so called from their free way of rebuking, &c. Hence Diogenes the Cynic said of him, Ἴδε τὸν ἀρχιερέα; I see the evil; and Antisthenes himself was called Ἀρσινώς μανδρός, an ingenuous and honest dog: it being the distinguished character of the Cynics to attack and bark at the ill, and to defend and fawn on the good.

Arrian very much extols the Cynical genius: "A Cynic (says he) is a messenger sent from Jupiter to overlook human affairs; a public doctor, and tutor of mankind; who instructs and chastises at the same time; an Ἀκέλευτος; a lord and king, adorned with a sceptre and diadem, who governs the people; and this voluntarily, without trembling, without guards, &c. but by a good conscience." The ground of this encomium may be owing, in some measure, to the affinity between the Stoics and Cynics: the chief difference between them confined in this, that the former were more modest and revered than the latter; who were said to have bannished all flame, and were able to practice any obliquity without blushing.

Herodotus, according to Laertius observes of Diogenes, that he did every thing openly, whether it belonged to Ceres or to Venus: though the same Laertius adds, that he did it in imitation of the chorididacali, i.e. he only ran to an excess of impudence, to put others out of conceit with it.

The sect of the Cynics is to be regarded more as an institution of manners than as a school of philosophy: as it was formed rather for the purpose of providing a remedy for the moral disorders of luxury, ambition, and avarice, than with a view to establish any new theory of speculative opinions. Antisthenes, and the other leaders of this sect, were confedered by their disciples not so much as the authors of a new doctrine, as inflexible patterns of virtue, and rather as examples for their imitation in the conduct of life, than as preceptors to guide them in the search after truth. The sole end of the Cynic philosophy was to subdue the passions and produce simplicity of manners: and the characteristic peculiarities of the sect were an indigant contempt of expensive vices, and a vigorous adherence to the rules of moral discipline. According to the original spirit of the sect, a Cynic was one who appeared in a coarse garb, and carried a wallet and staff, as external symbols of severity, and who regarded every thing with indifference, except that kind of virtue which consists in a haughty contempt of external good, and a hardy endurance of external ill. Simplicity and moderation were, indeed, in this sect, carried to the extreme of austerity, and at last produced the floical system of apathy: but the real sign of both these sects seem to have been to establish various manners. The vigorous discipline of the Cynics, which had for its primary object the laudable purpose of exhibiting an example of moderation and virtuous self-command, degenerated by degrees into the most absurd severity: but candour will fuggest an apology for the errors of this extreme. In order to be at perfect liberty to apply themselves to the cultivation of virtuous habits and manners without interruption from the noisy contents of speculative philosophy: the Cynics renounced every kind of scientific pursuit: accordingly they disdained all dialectic, physical, and mathematical speculations, and confined themselves to the study, or rather to the practice, of virtue. In this respect they formed themselves upon the model of Socrates: and it may be pleaded in their excuse, that the learning which chiefly prevailed in Greece at that time confisted very much in futile speculations and an illegitimate kind of eloquence, which contributed little towards the happiness of society, or the real improvement of the human mind. As an apology for the singularities of this sect, it may be further alleged, that the manners of the Greeks were at this time verging much towards the extreme of effeminacy. Luxury and vanity infected even the philosophers, as we may justly infer from the accounts that are transmitted to us concerning the dress and manners of Antisthenes, Arethusa, Apollodorus, and others. Socrates made an attempt to correct the public tali; and Antisthenes, without professing his judgment and moderation, adopted the same plan, but pursued it to an extreme that passed beyond the limits of decorum. Regarding attention to external appearance as unfavorable to virtue, he deviated into the simplicity of nature further than was consistent with the decorum of civilized life. His followers, induced by his example, and by the reputation and influence which he acquired, as a pattern of wisdom and fortitude, adopted his peculiarities and carried them to a ridiculous and absurd extreme. Thus the Cynic philosopher, being at first merely a few public monitors:—

"Virtutis verae cultus, rigidissque faciæs—"

Hor. ep. i. 1. 17.

The stern defender of pure virtue's cause—"

commanded attention and respect; but when, in process of time, the freedom of cenure degenerated into licentiousness, the boldnefs of the philosophers was admired by the vulgar, but their imprudence excited the wonder of the more judicious: and the whole order gradually sunk into diseftem and contempt. Hence we may account for the disgraceful tales which have been indifferently propagated concerning this sect: insomuch, that the singularity of the early Cynics, and their gross violations of decorum, rendered the sect, at a later period, not only ridiculous but infamous, and furnished occasion for those, who did not properly distinguish between the first design of this institution and its subflequent abuses, to declare against the Cynical philosophy in general, as a compound of vulgarity, lasciv, and malignity.

The sum of the moral doctrine of Antisthenes, and the Cynic sect, is this: virtue alone is a sufficient foundation for a happy life. Virtue confuits, not in a vain ostentation of learning, or an idle display of words but in a ready course of right conduct. Wildom and virtue are the same. A wise man will always be contented with his condition, and will live rather according to the precepts of virtue, than according to the laws or customs of his country. Wildom is a secure and impregnable fortress: virtue, armour which cannot be taken away. Whatever is honorable is good; whatever is disgraceful is evil. Virtue is the only bond of friendship. It is better to associate with a few good men against a vicious multitude, than to join the vicious, however numerous, against the good. The love of pleasure is a temporary madness." Laertius, Julian. Orat. Maxim. Tyr. Diff. Arrian. Diæ. Epist. Fabr. Bib. Grec. v. ii. Brucker's Hist. Philol. by Enfold, vol. 1.

Cynic Period. See Egyptian Year.

Cynic ἕδαιμον, ἔδαιμος Cynicus, a sort of convulsion, whereby the patient is brought to imitate the gestures, mannerisms, howlings, &c. of a dog. See Σχάρα.

Friedel, in the Philosophical Transactions, gives us an account of a very extraordinary ἕδαιμος of this kind, where two families, at Blackthorn in Oxfordshire, were seiz'd.

The novelty of the thing drew abundance of visitors to the village, and among the rest Dr. Willis; who, a good while before he reached the place, heard a terrible noise of barking and howling: upon his entering the house, he was immediately fatted by five girls, bawling, and answering each other by turns, with violent motions of the head. In
their face there was no convulsion seen, though syphilitic dilations, and oscillations of the mouth: their pulse was pretty regular; their voice was rather like that of the howling, than of the barking of dogs; though its returns were more frequent, with deep sighings between.

The _spisus_ had died all equally: whereas the youngest was but six, and the eldest sixteen years of age; at intervals they had their reason and lanes entire; but not long before one of them, returning to her yeg, let on the reef: till at length, all fasting, they fell like epiphanies on a bed laid in the middle of the room to receive them.

A little while they would be quietly and decently together; but upon a new origin of the spirits, they began to beat and bruise each other. Two of the youngest awaked while the doctor flayed, and left their fillers on the bed: but the _spisus_ from had hold them on again.

In July 1770, Dr. Freund visited another family, in the same village; where one boy and three girls, had been feized ten weeks, without any apparent preceding cause. A girl had had it first; and the reef, as the mother informed him, were so stuck with their filler’s disord, that they too were feized. At his arrival, they were all at play, very briskly, and unconcernedly; before the doors; at length the eldest girl, about fourteen years of age, was feized as usual.

The only symptom of its approach, was a swelling of the stomac; which rising gradually up to the throat, let the muscles of the larynx and the head upon their usual convulsions: this riving was a certain symptom of an approaching paroxysm in them all; and it they endeavoured to stop it, it burst out with the greatest violence, and held the longer.

The noile they made was mendiant, and disagreeable; yet not so much like the barking or howling of dogs, as had been given out; as a kind kind of a long, consisting of three notes, or tones, repeated twice over; and closed by deep sighs, &c. accompanied with extraordinary gulleries and mutations of the head.

This disease the doctor takes to be natural; and to rise from the common cause of all convulsions, viz. from the animal spiris growing unruly in the nerves, and driving the muscles into various contractions, according to the circumstances of the individual.

**Cynips.** In Entomology, a genus of hymenoptera in the Linnean system, and of the pizzata in that of Fabricius. The mouth is furnished with a short undulated membraneous jaw, the mandibles vaulted, horine and cleft, and the lip entire; feelers four, short, unequal, and capituated; antenna moniliform; ring spirall, and often concealed within the body. The Fabrician character confils in having four uncal and somewhat capitlated feelers, the lip horny and entire, and the antenna moniliform.

Many of the excrecences found on the leaves, stems, branches, and roots of trees, are occasioned by the puncture of these insects; their larvae are soft, without feet, of a cylindrical form, and inhabit within the gall, where they infest the juices of the tree; the pupa differs from the complete insect onl in being delitrate of wings, but the rudiments of the wings are perceptible even in this state of the creature. Most of the species appear to be peculiar to certain plants; the oak and willow in particular are much infested with insects of this kind.

**Species.**

**Ascendens.** Brassy; abdomen petiolate, conic and ascending. Fabr.

The largest species in this genus, and is found in Saxony.

The antennae are short and black: festal pointed; legs pale, thighs black at the base.

**Rosei.** Black; abdomen ferruginous, black behind; legs ferruginous. Linn.

Inhabits the rota hispida in Europe.

**Compressa.** Glossy-black; abdomen compressed; shanks ferruginous. Fabr. Append. Native of Italy.

**Glechoma.** Fuscous; thorax villous. Fabr. _Cynips glechomae hederacea_. Linn.

Inhabits Europe, and forms rough globular galls on the glechoma hederacea.

**Quercus Baccarum.** Black, base of the antennae and legs yellowish, Linn.

Forms roundish, pellucid galls about the size of a pea on the under surface of the oak leaves. Found in Sweden, France, and other parts of Europe.

**Quercus Folii.** Black; thorax lineated; legs grey; thighs beneath black. Linn. _Diplolepis fusus_. Geoffri.

This species forms galls about the size of a nut on the under surface of the leaves of the oak.

**Quercus Inferus.** Deep black; antennae and legs pale. Linn.

Forms globular opaque red galls on the under surface of the leaves of the oak.

**Quercus Petioli.** Black; legs white; thighs fuscous. Linn.

Forms convex galls on the footstalk of oak leaves.

**Quercus Pedunculi.** Grey; wings with a linear cross. Linn.

Forms galls by its puncture the granulated connected galls on the male flowers of the oak.

**Quercus Ramuli.** Pale; abdomen and wings black. Linn.

**Quercus Tojae.** Grey; abdomen shining-ferruginous. Fabr.

One of the largest species of the genus, and is found in France on the quercus toja. Bofc.

**Fagi.** Deep black and without spots. Linn.

Forms pear-shaped galls on the under surface of the leaves of the beech.

**Viminalis.** Yellow; thorax black. Linn.

Forms galls on the leaves of the willow, salix viminalis.

**Capreae.** Green, and shining; legs pale. Linn.

Forms ferruginous galls, resembling grains of barley, on the leaves and branches of the willow.

**Salici Strobili.** Deep black; thorax greenish on the back. Linn.

In the extremities of the branches of the salix glabra, which it dilates into a greenish-shaded excescence.

**Americanae.** Black; legs pale. Linn.

Forms unequal galls at the ends of the branches of salix pentandra.

**Ruficornis.** Black; abdomen azure; antennae rufous. Fabr.

Found in France by Bofc.

**Aceris.** Body brown; thorax black, and longer than the abdomen. Gemel.


**Megacephala.** Deep black; head large and retuse; abdomen truncated. Fabr.

A small species, found on rotten wood in Denmark.

**Italica.** Deep black and shining; thorax golden. Fabr.

Native of Italy.

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**Pseudes.**
Breyes. In protuberances of the ficus carica. Linn. 
Sycamor. In protuberances of the ficus sycomorus. 
Hafied.
The body is black; the wings weak and exerted. 
Lonicerns. Black; abdomen compressor; wings 
long, white, and marked with two black dots. Fabr. 
Inhabits France, and is found in a small flat gall. Bofo. 
Aperea. Without wings, ferialous with compressor 
abdomen marked with a broad black band. 
A large species, found in France. 
Chili. 
Forms white galls about the size of a nut, and of a glo- 
bular form, which are full of clear oil, on the branches of 
rosmarinus chilensis. 
Atterina. Black, with raised dots; tarsi pale. 
Schrank. 
Inhabits Austria, and forms a very large excrescence on 
the limbs of plants. 
Ribis. Silky green-gold punctured; bristles at the end of 
the tail shorter than the body. Schrank. 
Forms protuberances on the limbs and branches of the 
rubus caesius.
Phragmites. Black; bafe of the antennae and legs 
teffaceous; abdomen elongated into a broad projecting tail. 
Schrack. 
Found in the infested stalk of the arundo phragmites. 
Lugdunae. Black, spotted with yellow; posterior 
thighs globular, and dentated at the inner margin; 
flag triple, turned back over the abdomen. Tourette. 
Ac. Par. 
A large species, found on various plants. 
Testacea. Teffaceous; head and legs yellowish; eyes 
black. Gmel. Native of Europe. 
Nigra. Black; bafe of the abdomen and legs pale. 
Gmel. Inhabits Europe. 
Inanita. Black; abdomen of one segment; the an-
terior part with a diaphanous spot each side; legs ferri- 
ginous. Gmel. 
Size of formica rufa, and inhabits Upfal.
Cynna, in Ancient Geography, a town of Achaia, in the 
vicinity of Heraclea; the same with the episcopal town of 
Cyrene, placed by Hierocles in Galatia.
Cyno, a place of Egypt, in the Delta, between 
Tamus and Tava, according to the Itinerary of Antonine. 
Cynecephala, eminences of Greece, in Thel- 
faly, before Scotis, mentioned by Strabo; who adds, that 
the Romans under the command of T. Quintius Flaminius, 
gained here a victory.—Also, the most western promontory 
of the ile of Corea or Corfu.
Cynocephali, a faction of the fima, with short tail, 
including the baboons. See Sima. 
Cynocephali, in Mythology, a kind of baboons, 
or animals with heads like dogs, which were wonderfully 
edowed and revered in many temples of Egypt. See 
Cynocephali. 
Cynocephalus, in Ichthology, a name given to 
some species of the Squalus, which see. 
Cynocrinblos, in Botany, Dioscorides; Bauh. p. 
122. Affine folis; Barad. ic. 335. Profrata; Gurt. tab. 
75: fig. 9. See Thelycomum. C. mas and femina; Can. 
epit. 999. See Mergus peregrinus. 
Cynochtonon. See Acmeite. 
Cynodesmus, or Cynodesmion, among Anatome-
§phites, the bard, or ligament, which ties the prepuce of the 
yard to the nut or glass. 
Cynodon, in Ichthology, the name given to the 
Sparus Dentex, which see. 
Vol. X.
Cynoglossa, in Bonner, minor montana. Col 
Echphr. See Myosotis Lophola. 
Cynoglossa montana vilica et maxima. See Cyno-
glossum officinale et aquamnium. 
Cynoglossoides, lard. See Dorado Indica 
et Africana. 
Cynoglossum (Aegicarpa, from the shape of the 
131. Vent. 2. 305. Nuts and order, pentandria mono-
Jull. 
Gen. Ch. Cal. Pentah one-leaved, inferior, with five 
divisions, permanent. Cor. monoptapetal, invad, shaped-
the length of the calyx; tube cylinidrical, shorter than the 
border, closed at the mouth by five corves, prominent, con-
verging scales; border cleft half way down into five obtus-
fragments. Stam. Filaments five, very short, in the mouth of 
the tube; anders roundish. Fil. Germs four; style awl-
shaped, permanent. Peric. Nuts four, compressed or con-
cave, attached to the fil by their interior side. 
Eff. Ch. Corolla funnel-shaped; the throat closed with 
arched scales. Nuts flat, attached to the stylo by their 
interior side. 
Wild. 1. Phil. le. tab. 78. Curt. Locd. Fae. 4. tab. 16. 
III. 1. Pl. 92. fig. 1 (C. majus vulgare; Bach. p. 257-
Tourn. 139. L. ic. 583.) "Stamens shorter than the 
leaf; leaves broad-lanceolate, downy. Filled. Root bi-
emial, spindle-shaped, a little branched, with a black 
mark. Whole herb downy and left to the touch, with a 
strong fetid smell resembling that of mace, or the urine of 
dogs. Stem about two feet high, erect, cylindrical, often 
frowarded, branched, leafy. Leaves scattered, entire, un-
dulated, veined, of a dullish green colour, seven or eight 
ineches long; lowermost petioled, upper ones half em-
bracing the stem, almost heart-shaped. Flowers in recurved 
naked racemes, forming a panicule, small, dull purplish; 
lobes of the corolla rounded; stigma acute. Seeds in-
ferdly ovate, attached by their points, rough with numer-
ous hooked prickles. A native of England and most parts 
of Europe, by road fides and in waste places, chiefly in a 
calcareous soil. Like most plants of its natural family, it 
is mucilaginous, astringent and narcotic, and is supposed 
to be deleterious, when taken internally in any consider-
able quantity. A deception in the roots taken inwardly, 
and with tenacity of them applied externally, have been re-
commended in frumentous and phragnetous cases; but no prep-
paration of the plant is much used in the present practice. 
Fl. Aug. 2. Wild. C. montana; Lam. 2. C. fimbri-
virens; Bauh. pin. 257. C. folio vivent; Koi. Synt. C. 
montana viventi folio fibro minore; Tourn. 140. Cy-
nglofia montana media; Colin. ecphr. 176. tab. 135.) 
"Stamens shorter than the corolla; leaves lanceolate, some-
what spotted, shining, nearly naked, rather feebrous, with 
small tubercles." Root annual or biennal. Stem about a 
foot and half high, but little branched, stocked with loose 
hair. Leaves green, not downy, roughish with short separ-
ate hairs; root ones petiolar; a little moved; stem items 
fellie, oblong, rather dilated, shortly fringed. Flowers at first 
reddish; afterwards assuming a bluish hue. The whole plant 
is almost free of any fetid smell. A native of Switzerland, 
France, and some parts of England, especially Essex. 3. C. 
Vahl. Symb. 2. 34. (C. ampliclave; Lam. III. 1794. C. 
42.)
CYN

cell." Lam. Root annual. Stems a foot high, smooth, leafy, branched at the top. Leaves smooth above, rough, with short stiff hairs at the edges and underneath. Flowers white, peduncled. Nuts four, small, incumbent on an an-h Apostate receptacle which becomes incarned as the seeds ripen. Lambs ears acuminate, exstminated at the edge into a folioid whitish mem- branous, deeply fringed, with a large toothed hole at the top, whence this and some other species have been called navel- wort. A native of Portugal. 19. C. linatum, Lam. 8. Willd. 18. (C. orientale flore roso; Tourn. Cor. 7.) "Calyxes tormentous-woolly: border of the corolla with five deep acute divisions; racemes drooping." Stem a foot high, fruticul, pubescent towards the top, leafy, somewhat branched. Root-leaves seven or eight inches long, nine or ten lines broad, petiolated, narrow-lanceolate, pubic- cent; stem leaves small, oval-acute, embracing the stem. Flowers in short, clustered, woolly, terminal racemes; calyx-pitcher-shaped, very woolly; style longer than the flower. A native of the Levant. 20. C. japonicum, Lin. 1. Lam. 9. Willd. 10. Tourn. Flor. 3. See "Stems leaves oblong, fragg: flesms prolimate." Root annual. Stems four or five, cylindrical, fragg: decumbent, afterwards hebe- erect, unequal, four or five inches long. Leaves embracing the stem, oblong, acute, finely serrated, fragg: on both sides, spreading. Flowers in a terminal raceme, purple. A native of Japan. 21. C. Interforfum, Lam. 10. Ill. Pl. 92. fig. 2. Willd. 20. "Leaves linear, acute, narrow, hairy; flowers lateral, solitary, nearly sessile." A small fragg: plant, of a white or white colour. Stems three or four inches long, leafy, leafy. Leaves nearly an inch long, a line broad. Flowers small; corolla scarcely longer than the calyx. Seeds small, elliptical, rough at the edge with radiant points. Found near Limabon Dombe. 22. C. florento. Lam. Ill. Willd. 21. Jacq. Collect. 3. 3. Schmidt Bohem. 1. n. 220. "Stem prostrate; leaves lanceolate, frabrous; peduncles axillary, one-flowered; seeds umbilicated, smooth." Root annual. Stems somewhat four-cornered, dichotomous; lower leaves opposite.


CYNGLASSUM borinicus folio athipicum; Pluk. See BORAGO officinalis.

CYNGLASSUM glandulii fuscum globit; Hall. See MYOSITIS Lappula.

CYNGLASSUM minus; C. Bath. See MYOSITIS Lappula.

CYNGLASSUM peregrine maritimum; Moiss. See PULMONARIA mar. ina.

CYNGLASSUM prostratus maritimum; Pluk. See PULMONARIA mar. ina.

CYNGLASSUM, virginicum flore & fruticula minimo; Moiss. See MYOSITIS Virginiana.

Preparation and Culture.—C. leutanicum and C. linifolium, called Venus's navelwort by our gardeners, are annuals commonly grown to adorn the borders of the flower garden. They succeed best when sown in autumn, and flower earlier, but do not well bear transplanting. C. em- phalodes should be planted in a moist cool situation; it then readily propagates itself by its trailers, but seldom produces seeds.

CYNGLASSUM, in Gardening, comprises plants of the herbaceous annual and perennial ornamental kinds. Of which the species cultivated are the flat-leaved hound's-tongue, or Venus's navelwort (C. linifolium); the Portugal hound's-tongue, or Venus's navelwort (C. leutanicum); the comfrey-leaved hound's-tongue (C. omphaloides).

Method of Culture.—The two first or annual sorts, are usually increased by sowing the seeds in the early spring months, in patches, in the borders, clumps, or other places where the plants are to remain and flower, covering them in a light manner. When the plants appear, they only stand in need of being kept clean from weeds, and having a little water occasionally given them.

But in order to protract the time of flowering, two or three different sowings should be made, at proper intervals, in these sorts of plants.

With regard to the third or perennial sort, it may be easily propagated by taking off the rooted flalks, and plant- ing them out in the situations where they are to remain, either in the spring, summer, or autumnal seasons.

These are a sort of plants which afford much ornament and variety to the garden, as well as the borders, clumps, and other compartments of grounds of the pleasurable kind.

CYNGLASSUS, in Lithology, a species of Pleuro- necter, which see.

CYNGLUSCOS, from new, dog, and now, wolf, in Natural History, a name given by the ancient writers to a creature which had the shape partle of a dog, and partly of a wolf, and was generated, according to their accounts, by a mixture of those two species of animals in copulation, as the Lesci-colored was, between the hyena and hondse.


Gen. Ch. Cat. Perianth four-leaved; leaves oblong, reflexed. Cor. Petals five, lanceolate, equal, nearly erect. Stem: Filaments ten, longer than the petals; anthers oval, bifid at the tip. Pyl. Germ superior, boat-shaped; style filiform, the length of the stamens; stigma simple. Peric. Legume somewhat helsy, short, lunate, or nearly hemi- spherical, slightly compressed laterally, containing one or two large, elliptical, slightly compressed seeds.
CYNOMOLGUS, in Zoology, a species of Simia, which feeds on the fruit of the Cynometra. See CYNOMETRA.

CYNOMETRA, in Botany (cynos meta, a coyn or monkey), a genus of trees, the species of which are remarkable for the softness of their leaves, the peculiar odour they emit, and the felicity of their situation. C. ferox is a large tree, with large, oblong leaves, and large, woody branches, which are sometimes split into two. The flowers are small, white, and fragrant. The fruit is a large, round, black berry, containing a hard stone, which is used in medicine.

CYNODONTIUM, Hedw. See TCHISTOTOMUM.

CYNOPHALLOPHORUS, Plum. See CAPPARIS CYPHALLOPHORA, n. 37.

CYPHONII, in Antiquity, a festival observed in the dog-days at Argos, and so called απὸ τῶν κυκλών ζων, i.e. from killing dogs; because it was usual on this day to kill all the dogs they met with.

CYNOPOLIS, or CYPNOSIS, "city of dogs," in Ancient Geography, a town of Upper Egypt, supposed, by some ruined columns and ancient edifices, to be the present Mit-
The inhabitants of this city hold the dogs in great veneration. The priests nourished this animal with sacred meat, in honour of Anubis, the companion and guardian of Osiris. —Also, a town of Aby in Ithoria.

**Cynopterus Xenon**, a name of Egypt, extending on both sides of the Nile; the capital of which, according to Strabo, was Cynopolis.

**Cynorex**, or **Cynodes O Rhexis**, an immoderate appetite to the degree of a diphæte; called also *fames canina*, and *bulina*.

**Cynorrhodon**, in Botany, the dog-rose, as the Greek term signifies; the common wild brier, or wild white rose, to common in our hedges.

**Cynortion**, in Ancient Geography, a mountain of Greece in the Peloponnesus, where was a temple of Apollo, according to Pausanias.

**Cynornychium**, in Botany. See *Chelone pulexseus*.

**Cynosarges**, a place of Greece in Attica, near Athens; where were the gymnasion and a temple consecrated to Apollo. The Cynic philosophers had their school here.

**Cynosbatos**, from *cynos* and *batos*, *bulbo*, in Botany, a word used as the name of different shrubs by different authors. It is now generally used as the name of the wild, or dog-rose; but some authors have applied it to the common bramble; others to the *oxycanas*, and others to the *caper-buflus*.

The fruit of the wild rose is the *hip*, used in conserve, and said to be good in disorders of the breast, &c. See *Conservae*.

**Cynosorchis**, in Botany, C. Baur. See *Orchis pyramidalis*, *ubula* & *miliaris*.

**Cynossema**, in Ancient Geography, a promontory of the Thracian Choroneus. —Also, a promontory of the Doride, placed by Strabo between the towns of Lorimus and Chiusis. —Also, a maritime place of Egypt, in the vicinity of Tapoeres. —Strabo. —Also, a place of Africa in Libya. —Steph. Byz. —Also, a place of Greece, in Calydonia. —Id. —Also, a place of Thrace, in the environs of Maronea. —Strabo.

**Cynosura**, in Astronomy, a denomination given by the Greeks to *Ursa minor*, or the little bear.

The word is formed of *kwnos*, *a*. the dog's tail.

This is the constellation next our pole, consisting of seven stars; four whereof are disposed like the four wheels of a chariot; and three lengthwise, representing the beam: whence some give it the name of the chariot, or Charles's *wain*; a name now more commonly given to the seven principal stars forming the fame kind of figure in the Great Bear.

From thence seven stars it is the pole takes its name, *Septentrionalis*; and the rest of the hemisphere, as far as the line, *Septentriones*.

**Cynosura**, in Ancient Geography, a promontory of Greece, in Attica, formed by a small chain of mountains, being the continuation of mount Hyettus towards the east. —Also, a place of the Peloponnesus, in Arcadia. —Also, a place of the Peloponnesus in Laconia.

**Cynosuros**, in Zoology, a species of *Sinia*; which see.


Gen. Ch. Receptacle common unilaterial, with or without bractes. Cal. Glume two-valved, two or many-flowered. Cor. two-valved; the outer concave, longer; the inner flat, awnief; nectare two-leaved; leaflets ovate, acute, gibbous at the base. Stam. Filaments three, capillary; anthers oblong. Pest. Germ top-shaped; styles two, villous, reflexed; stigma simple. Peric. only the permanent corolla clumsily inveting the feed. Seed single, oblong, acuminate at each end.

Leaf. Ch. Calyx two-valved, chaffy, bearded, two or many-flowered, on a unilateral receptacle.

Obf. It has often been observed that this genus, as it was established by Linnæus, consists of species differing from each other in general habit, and other characters. Gartner has divided it into two, cyanthus and eelionus, with the following characters. 1. Cyanthus. Involucres pecilinatcd or pinnated, under the flowers. Calyx two-valved, two or four-flowered. Cor. two-glumed, longer than the calyx. Seed free, covered, furrowed on one side. 2. Eelionus. Cal. two-valved, four-flowered. Cor. two-glumed, with unequal valves. Capsule membranous, one-celled, valvef, one-seeded. Seed globular. It is by this percipar, which he calls a capsule, but which seems more properly an aril, that this genus, according to him, is distinguished from all the other known grafles. La March, when he wrote the alphabetical part of the French Encyclopédie Méthodique, adhered to the Linnæan arrangement; but afterwards in his *Illustration des Genres* adopted that of Gartner, retaining under cyanthus only eilusatus, echinatus, and aureus, which Dr. Stokes, in Withings' arrangements, had some time before pronounced to be the only legitimate species. After considerable deliberation, we have judged it most expedient, at least for the present, to keep the original genus entire.

*With Bractes.*

Cynosurus.

5. C. monostachyos. Mart. 17. Willd. 13. Vahl. Symb. 2. 20. "Spike simple; calyxes awl-shaped, about three-flowered; florets awned." Culum a foot and half high, upright, smooth. Leaves awl-shaped, narrow. Spike a span long; racis convex and keeled on the outside; spikelets imbricated on the inner side, alternate, smooth; outer calyx-valve the length of the florets; inner one smaller; florets bearded at the base, compressed, one perfect, another imperfect and filamenteous, the third quite abortive; outer valve of all the threeawned below the tip; awns straight, twice the length of the calyx. A native of the East Indies.

6. C. filiformis. Mart. 16. Willd. 12. Vahl. Symb. 2. 20. "Spike solitary, two-rowed; calyxes awl-shaped, three-flowered; abortive floret awned." Culum creeping, brachied, filiform, compressed at the bottom; internodes an inch long. Leaves at the joints, several on each spike, an inch and half long, bristle-shaped; spikelets compressed, equitant, nearly the same length with the leaves, and broader. Floriferous culms terminal, about seven inches long, quite simple, jointed, with a single awl-shaped leaf towards the middle. Spike an inch long, linear; spikelets small, alternate, compressed, smooth; calyx valves spreading, nearly equal, the length of the florets, acute; florets usually three, one perfect, sessile, another imperfect, filamenteous; the third quite abortive; the two former with an awn below the tip, a little longer than the calyx. A native of the East Indies.

7. C. uniculus. Linn. jun. Supp. 110. Lam. Enc. 5. Mart. 7. Willd. 11. Thunb. Prod. 17. "Spike solitary, two-rowed; calyxes many-flowered, mucronate; corollas flaccid at the base." Quite smooth, with the habit of unicus, but its calyx is bivallate, not many-valved. Spike linear; spikelets sessile, profusely close to the rachis, alternate, spreading at the sides, oblique, quite smooth. A native of the Cape of Good Hope.


9. C. Linn. Lam. Sp. Pl. 3. Mart. 3. Lam. Encyc. 5. Willd. 6. Lam. jun. Supp. 11. tab. 91. (Eleusine litoris. Linn. Lam. Ill. 1188.) "Spike solitary; inner glume of the calyx placed below the spikelets." Linn. "Spike rigid; spikelets sessile, in two rows, but strictly unilateral, about five flowers; glumes acute." Lam. Root annual. Culms slender, from five to seven inches high. Leaves very narrow, shorter than the sheath, slightly rolled in at the edges so as to give them a rush-like appearance. Spike scarcely an inch long, oval, sometimes conical, glaucous; spikelets compressed, awnless, lower ones somewhat peduncled; calyxes awl-shaped; outer one larger, keeled, roughish at the edges; inner one flat. A native of Spain.


WILD. 16. Vahl. Symb. 2. 21. "Spikes digitate; calyx four-flowered, amased at the back; outer petals of the perfect flowers awned, with bearded pencils." CALM sordidical, finely streaked, pubescent at the top. Spikes in threes, sometimes solitary, on very short peduncles, four or five inches long, bearded at the base, sometimes a little recurved at the end; rachis four or five, the inner side, channelled within; spikelets from the inner side only, fuscious, alternate, much crowded, awl-shaped, slightly compressed, spreading; inner valve of the calyx lower, ovate acuminate, almost transparent; outer one three times longer, lanceolate, attenuated, compressed, keeled, grooved on the back, ciliated in a raised line on each side of the groove; even on the middle of the valve, upright, the length of the valve; florets bearded at the base, two of them perfect, outer papillets beaded at the top with two yellow, ciliated with long, very soft, white hairs; two smaller, probably only staminal: one of them of seeds. A native of the East Indies. 16. C. mappaloides. Mart. 19. WILD. 17. Vahl. Symb. 2. 21. tab. 27. (Chloris petraea; Thumb. but not of Swartz.) "Spikes digitate; calyx two-flowered, somewhow globular; outer valvulus awned; florets awneds." CALM a foot high, almost leafless. Root-leaves two inches long, thinning, linear-lanceolate, sharpish; sheaths compressed, spatulate, twice the breadth of the leaves. Spikes five, an inch and half long, fuscious, woolly at the base, linear, narrow, furrigenous, shining; spikelets the size of millet seed, alternate, crowded, very obtuse; outer valve of the calyx shorter than the corolla, ovate, awned a little below the tip, emarginate, keeled, inner ones smaller; outer glumes of the corolla keeled, ciliated at the edges and on the keel.


Root annual. Calm from six to nine inches long, ascending, bent at the joints, leaffy. Leaves two or three lines broad, rough at the edges. Spikes generally four, sometimes five, scarcely an inch thick, thick, compressed, obtuse, with a small point; spikelets short, close, mucronate, two-flowered. A native of Afea, Africa, and America. OB. La Marc Cordidisk for this species as an elaeus, in opposition to Leuter, who afferts that, notwithstanding the finitude of its habit, it must be referred to another genus. May it not be justly doubted whether the pericarp on which Garther lay so much stress, be in this case a sufficient generic distinction? 18. C. incius. LINN. Sp. Pl. 8. Mart. 10. Lam. Ency. 10. WILD. 19. (Elushia; Curt Lam. Ill. 128. fig. 3. Pulm. commodius FERLK. Decl. 18. Gramen dactyloides; BURN. ZEYL. 106. tab. 47. fig. 1. G. vaececum; RUPM. Amb. 6. 10. tab. 4, fig. 2. Ranara-pullu; Rheed. Mal. 12. 131. tab. 16.) "Spikes digitate, linear; calyx compressed, declined, with a knot at the base." Root annual. Calm sometimes only four or five inches, sometimes more than a foot long, leaffy, commonly with a branch springing from the knot. Leaves about two lines broad, in two rows, belet with loose hairs, especially about the sheath. Spikes from three to seven, in an open fascicle two or three inches long, generally with a solitary spike below the fascicle; spikelets three or four-flowered, short, close, awnless, in two or three longitudinal rows. A native of the East Indies. 19. C. peticata. (LAM. Ency. 12. C. Elufine; III. 1136.) "Spikes linear, somewhat peticate, alternate, in a kind of raceme; spikelets three-flowered, shorter than the mucronate calyx." LEAVES three lines broad or more, smooth. Spikes from forty to fifty, in an erect raceme five or six inches long, fuscious, alternate, solitary or in pairs; smooth, compressed, diminishing in length from the bottom to the top, lower ones from twelve to fifteen lines long; spikelets fuscious, in two rows, alternate, compressed, smooth, with one of their edges to the rachis as in lobum, two or three-flowered. Found in the East Indies by Sonnerat. 20. C. virgatus. LION. Sp. PL. 6. MART. 11. LAM. ENC. 13. WILD. 20. (Feltuca virgata; Lam. Ill. Gramen liliaceum punctata e specie simplicissim; Brown. Jan. 137. G. dactylo; SLOON. Jan. 34. Hilt. 1. 113. tab. 70. fig. 2.) "Panicle with simple branches; spikelets fuscious, about five-flowered; uppermost floret barren; the lower ones somewhat awned." β DOMINGENIUS. "All the florets armed." MART. 12. JACQ. MF. 2. 363. 1°. RAR. 1. tab. 22. (Bromus capillaris; MUNCH. MATH. 194.) "Culms about a foot and half high, erect, leaffy. Leaves from two to four lines broad, with loose hairs on their upper surface towards the base, and a little upon the fheath. Panicle from five to seven inches long, pale green, sometimes purplish. Spikes from twenty to thirty, two or three inches long, linear, flender, some alternate, others fascicled or whorled, two or three together at intervals; spikelets fuscous, alternate, almost two-rowed, but truly unilateral, very small, smooth; calyx glumes lanceolate, keeled, compressed, rough at the back. A native of the East and West Indies.

Cynosurus crassicostus; AIT. MART. WILD. See Phalaris crassicostus.

Cynosurus curtus; LINN. & C. spherocephalus JACQ. See Selserla.

Cynosurus scoparius; LAM. ENC. See Andropogon polystachylon.

Cynoxyton, Americanum folia crassifolius; Pluk. See Nyssa aquatica.

cynozoslos, a name given by some of the old Greek writers, and, from them, copied by Pliny, and the Latins, to express the black chamelion thistle, a poisonous plant, which it was very necessary to distinguish perfectly from the plant called the white chamelion thistle, which was a safe and efficient plant.

Cynthus, or Cynthia, in Ancient Geography, a mountain near the sea, towards the middle of the eastern coast of the island of Delos. The city of Delos was at the foot of this mountain, between which and the sea, against the isle of Rhenia, was a theatre of marble. This mountain was said to be so high, that the shadow of it covered the whole isle; but modern travellers represent it as a hill of very moderate height. Here Latona is said to have been delivered of Apollo and Diana; whence it derived its peculiar sanctity. It is one block of ordinary granite; cut on the side that faces the city in regular steps, enclosed with a wall. On the top of the mountain are the remains of a flatly building, with a Mosaic pavement, broken pillars, and other monuments of antiquity. This mountain, as well as the whole isle, was consecrated to Apollo; and hence he, and also Diana, derived the appellation of Cynthia.

Cynura, a town of Greece, in the Peloponnesus, the territory of which was always a faulset of dispute between the kings of Lacedaemon and those of Argos.

Cynura, a town of the Argolid, in that part which belonged to Laconia. The inhabitants of this town were called Cynurii.
CYPUS, a place of Greece on the sea-coast, N.E. of Opuntia, of which it was the port.

CYCLOPS, in Zoology, a name given to the Orang-Utan, or Simia Satyrus; which see.

CYCLOPS, or Cyon, a griff, spring, or sucker.


CYPER, a town of Greece, in Thessaly.

CYPERTA, a town of Africa, in Libya.

CYPARISSA, a town of various orthography, situated in that part of Messenia which, extending itself towards the north-west, formed with the territory of Elys a gulf, called the gulf of Cypris. In the time of Pausanias, it had two temples, one of Apollo and another of Diana Cypris. It has been conjectured, that this town took its name from the great quantity of cypris which grew near it. The Cypris of Homer is thought by some persons, in deference to Strabo, to have been the burgh of Lycorea, situated on a mountain near Parnassus. According to Pausanias, it was the fame town with Anticyra, situated on an ilithmus, which united with the continent a small peninsula, that extended to the gulf of Corinth. Anticyra was celebrated among the ancients for the helcbole which was supplied by its vicinity.

This place is now called Apropolia.

CYPARISSEI, a river of the Peloponnesus in Messenia, near the town of Cypris. Both the river and town are called Arcadia.

CYPARISSA, a town on the ilithmus of a peninsula in Laconia, N.W. of Hypertobatum, which had a port in the lower part of a small bay. It was destroyed in the time of Pausanias. Near its ruins was a temple of Minerva Cypris.

—Allo, one of the names given to the isle of Samos.

CYPARISIUM PRONTOREM, a promontory of the Peloponnesus in Messenia; which took its name from that of the town Cypris. Strabo.

CYPARISIUS, a small river of Messenia, south of Aulon, well of Electra, which received the Cucus. The river discharged itself into a small gulf, called the gulf of Cyprisus, or Cypris. The gulf is now called the gulf of Phocis.


CYPASIS, a town situated towards the Hellespont.


CYPERI Genus Indicum; Pluk. See Scirpus retrofractus.

CYPEROIDES, the third natural order of monocotyle-donous, hypogenous plants in the family of Julliace, with the following character. Flowers perfect, or monocious, very rarely dioecious; each furnished with a chaffy glum, which fulfils the office of a calyx; glumes one-flowered, crowded, variously disposed so as to form either spikes or fascicles; sometimes empty, probably owing to the flowers having become abortive. Staminis generally three, inferted under the ptilil. Germ one, superior; style one; stigmas most frequently three, sometimes two. Seed one, naked, or ariled, i.e. covered with a tunica, in some surrounding by bristles or soft hairs springing from the base. Carculus and germination as in the gramineae. Stem or culmis cylindrical, or triangular; in molt without knots, in a few jointed. Floral leaves sessile; root and stem one sheathing; sheaths entire. It contains the following genera. 1. Flowers monocious. Carex. II. Flowers perfect. Furera, fechous, gahnia, criphorium, feirus, cyprus, thrycocephalum, kil-

lingia, mapania, clytrix. Ventenat has admitted only canna, fechous, criphorium, feirus, and cyprus.


Gen. Ch. Cal. A single flower to each flower, keeled, convex, permanent, compounding part of an imbricated two-rowed spike, with the rows opposite to each other. Cor. none. Stam. Filaments generally three, sometimes two or one; anthers oblong, furrowed. Fil. German superior, very small; style bifid, long; stigmas three, capillary. Seed fingle, naked, generally somewhat triangular, acuminate, without any hairs at the base.


This vall genus is divided into two principal fections, the first containing of species with a single stem, the others having a triangular one. The latter, by far the most numerous, are subdivided according as their spikelets are one or more, and fesile, or very numerous in branched or compound umbel-like panicles. Wildenow reckons 56 species of Cyperus in all, but this is perhaps scarcely half the true number.

In the first fection we find C. minimus, Linn. of which C. tenellus L. Suppl. 103. (Scirpus fistulosus a Rothb. tab. 15. f. 4.) is a variety, and the very remarkable C. articulatus, Linn. Sp. Pl. whose naked and jointed stems are two or three feet high. It grows in Jamaica, as well as in Egypt and the East Indies. See its figure in Sloane's Jamaica, t. 81. f. 1.

In the second fection are C. longis, Linn. Sp. Pl. 67. Engl. Bot. t. 1350. whole long creeping roots are highly aromatic and agreeable. C. rotundus, an oriental species, whose round tuberous knobs have a similar fragrance, and are used in Greece, where they are sold called xeris, to keep infects away from clothes. —C. eucalymnus, whose radial tubes taste like very sweet firhders, and are sold in the markets of Italy and the Levant. The plant has been cultivated in our green-houses, where its roots increase, but never bear flowers. This is Dulichichnum of Dodonaeus, p. 540; C. eucalymnus of Gerarde em. 32. The Italians call it Trai. —Above all the C. Papyrus is most remarkable, the celebrated Papyrus of the ancients, so called perhaps from the Syrian name Dabber, whence also our word paper. This grows in Egypt, Syria, Sicily, and Madagascar, in watery places. It has flowered finely in England, having been but lately brought hither from the south of Europe. The stem is many feet in height, and terminated by a very large and compound umbel, or rather cyme, of innumerable flowers. The root is very large and creeping. Leaves sword-shaped, sheathing the lower part of the stem. The ancient paper, it must be confessed of a very rude kind, was made of the inner rind of the stem cut into strips, and laid together in parallel and transverse rows, which being pressed with weights adhered together. An ancient manuscript, composed of such paper, may be seen in the British Museum. The floral thyrsus or tuft of the Papyrus was used to adorn the temples and statues of the gods. Two new species of Cyperus, found by Dr. Sibther, are figured in the Flora Graeca, and described by Dr. Smith; viz. C. camphora. t. 44. Stem triangular, naked. Umbel leafe. Spikelets linear, very long. Knots of the root ovate, obliquely zonated. This grows in marshes near Patras, and has a fragrant root, a large and handsome umbel, with remarkably long linear spikelets of a deep shining brown. C. radiifera. t. 45. — Stem
CYP

"Spikelets beneath to strong frame, Thcflaly, it Ancient back town. These the loss the emarginate Medical Greece, the and marble. The shells of this kind are involuted, superbative, smooth and oblate. The plants which produce them both grow in watery places, and have leaves and flowers in some measure resembling the water-grasses, which, from their resemblance to thistles, are called cyperus graffier. They are poised of the same virtues, cure ill-ventilated breaths, are good in nephritic disorders, in colics, and in disorders of the womb. They are taken in powder, or decoction.

The roots of cyperus are attenuants, and debauchants, promote urine, and the menes, are good laxatives, and serviceable in the first stages of the dyspepsies.

CYPHANTA, in Ancient Geography, a town of the Peloponnesus, in the interior of Lacedaemon; 10 stadia from the sea, according to Pausanias.—Allo, a port of Laconia, in the Argolic gulf, south of Prousia. Although the town was destroyed in the time of Pausanias, there remained a temple of Zelus, with a statue of this god in marble.

CYPHARA, the name of a strong place in Thesaly, mentioned by Livy.

CYPHER. See Cipher.

CYPHI, a term in the Arabian Pharmacy, signifying a kind of cordial perfume.

Mithridates gave the appellation cyphi to the troches with which the Egyptian priests used to sweeten their gods, to make them grant what they requested. He used the same in the composition of mithridate, on account of their efficacy against poisons, delusions, &c.

The cyphi are composed of raians, or dried grapes, turpentine, myrrh, balsam, spica nardoi, calis lignea, afa-atham, faifon, &c. tempered into a mas with honey and a little wine.

CYPHIA, in Botany, a genus separated by Bergius and Jussieu from Lobelia, on account of its anthems being all distinct and unconnected; but that character proving of no importance in simple flowers, this alteration has not been generally adopted. See Lobelia.

CYPHOMA, CYPHOS, and CYPHOPSIS, in Medical Writers, an incrustation of the spine, forming a crookedness of the back.

CYPHON, in Antiquity, a kind of punishment used by the Athenians; it was a collar made of wood, so called, because it contained the criminal, who had this punishment inflicted on him, to bow down his head.

CYPHONISM, CYPHONISMUS, from ψως, which has various significations, derived from ψως, crooked, a kind of torture, or punishment, in use among the ancients.

The learned are at a loss to determine what it was; some will have it to be that mentioned by St. Jerome, in his Life of Paul the Hermite, chap. 2, which consisted in smearing the body over with honey, and thus exposing the party, with his hands tied, to the warm sun, to invite the flies and other vermin to persecute him.

CYPHOS, in Ancient Geography, a town of Greece, mentioned by Homer as furnishing 22 ships for the siege of Troy. Steph. Byz. refers to two places under this name, one in Thesaly, and another in Perrhasia. He also mentions a river of this name.


CYPHUS, a village of Greece, in Perrhasia. Strabo.

CYP/REA, in Conchology, a genus of univalves. The shells of this kind are involuted, superbative, smooth and oblate. They are poised of the same virtues, cure ill-ventilated breaths, are good in nephritic disorders, in colics, and in disorders of the womb. They are taken in powder, or decoction.

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CYPHONISM, CYPHONISMUS, from ψως, which has

Species.

EXANTHEMA. Shell subtuberculatd, fernigrous, with whirling round spots and ocellations; and dorsal line somewhat ramose. Lith. &c.

Native of the American and Atlantic seas.

Mappa. Shell subtuberculatd, and marked with irregular characters; dorsal line ramose. Linn. Porcellana monstrosa, Rumph. Carta geographicae, Argenv.

Inhabits the Indian and African seas, and is not a common species.

ARABICA. Shell slightly tuberculatd with irregular characters; dorsal stripe simple. Linn. Porcellana literata, Rumpf.

Length about three inches; general colour white, with irregular brown marks resembling Arabic characters. Inhabits India.

Argus. Shell slightly tuberculatd, subcylindrical; sprinkled with ocellated spots; beneath four brown spots. Linn. Argus, Rumpf. Argus magus, Argenv.

Native of the Indian and Atlantic seas.

Testudinaria. Shell obse. and subcylindrical, with the extremities deflected. Linn. Testudinaria, Rumpf.

Inhabits the Persian gulf.

Stercoraria. Shell somewhat tuberculatd, gibbous, with bllnd and telalaceous spots; emargined each side, and flat beneath.

Native of Guinea.

Carniola. Shell slightly tuberculatd, pale with flesh-coloured bands; mouth violet. Linn.

Inhabits the Atlantic ocean. This shell is sometimes white, with brown bands.

Zebra. Shell tuberculatd, cinerea with brown bands. Gmel.

Native of India.

Talpa. Shell slightly tuberculatd, subcylindrical, telalaceous with pale bands; beneath thickened and brown. Linn. Talpa, Argenv.

Length from two to three inches. Native of India.

Amethysta. Shell subtuberculatd; sides gibbous and decorticatd; back violet. Linn. Amethysta, Rumpf.

Native of Madagascar.

Lurida. Shell slightly tuberculatd, lurid, and slightly...
the extremities pale yellow, with two black spots. Gmel. 
Searis, Argent.
Inhabits the Mediterranean, Atlantic, and American seas.

**Veneridae.** Shell slightly turbinated, spotted and marked with yellowish dots; the extremities spotted with brown; throat rufous. Linn.

*Native country unknown.*

**Guctata.** Shell slightly turbinated and white, with subulate denticles. Linn.

*Found in the Sicilian seas.*

**Fragilis.** Shell turbinated, ovate, glaucous, with tesselaceous waves, and pale bands. Linn.

*Inhabits the Mediterranean sea.* Gault.

**Oculata.** Shell thinly gibbous; fulvous dotted with white; line in the middle horizontal; beneath white; teeth yellow. Gmel.

*Described and figured by Linn. The native place not ascertained.*

**Cinerata.** Shell thin, ventricose, reddish-grey with paler bands and inner white. Gmel.

**Plumbea.** Shell slightly turbinated, thin; back lead colour, with four bands varied with blue and brown, unilaterated with brownish at the margin, and marked with blue and brown lines. Gmel.

*A rare species, found on the coast of Guinea.*

**Oculata.** Shell thinly turbinated; rufescent-brown with white occlusions, and three paler bands on the back. Linn.

*Inhabits the American seas.*

**Histrio.** Shell ovate, slightly turbinated, with sublivel occlusions; beneath flat and white; sides thickened, black, dotted with brown; dorsal line livid; throat violet. Gmel.

*Native of the Indian seas.*

**Aurantium.** Shell somewhat turbinated; orange with white immaculate margin. Gmel.

*One of the most beautiful and elegant species of its genus, and well known to English collectors under the title of cyprea aurora, or morning-dawn cowry. This species was first discovered by captain Cook at the Friendly Islands, where they were observed to constitute part of the scenery and ornaments of the dress of the chiefs and principal natives. Only a few shells of this species have hitherto been brought to Europe, and of course bear a high price.*

**Ferrugiosa.** Shell thin, elongated, yellowish or bluish, with ferruginous spots; within blue. Gmel.

*The native places of this and several of the following species have not been hitherto ascertained.*

**Livida.** Shell thin, elongated, uniformly fawn-colour, pale yellow or reddish; beneath dotted with brown; teeth subulate. Gmel.

**Gissa.** Shell thin and gibbous; back clouded and banded transversely. Gmel.

**Turbinata.** Shell turbinated, ovate, and glaucous, with pale angulated spots. Gmel.

**Venerata.** Shell oblong and fusiform, with striated golden spots; within blue. Bonann.

**Purpurascens.** Shell oblong, purplish; beneath surrounded with a white line. Gault.

**Albida.** Shell oblong, whitish; ends of the lips spotted with livid. Gault.

**Rufescens.** Shell oblong, reddish-brown, beneath whitish. Gault.

**Translucens.** Shell cylinodrical, cinerous, with pellucid bands. Gault.

**Punctulata.** Shell cylinodrical, fragile, white, with transverse bands of reddish dots. Gault.

**Turbinata.** Shell obtuse, ovate, slightly turbinated, with a longitudinal tesselaceous line. Seba.

**Dorningia.** Shell oblong, ferruginous, with paler bands. Seba.

**Trifasciata.** Shell turbinated, thin, bluish-brown, with three yellowish bands varied with brown at each end. Knorr.

*A very rare species.*

**Consquarata.** Shell turbinated, bluish-white, dotted and clouded with brown. Born.

**Difasciata.** Shell oblong, shaded with purplish, with a transfuscoloured band, and another narrower white one, and a brown border. Born.

*Length four inches.*

**Cylindrica.** Shell cylindrical, above pale violet, and spotted with brown at the sides, and marked at each end with two brown spots. Born.

**Tereis.** Shell cylindrical, milk-white, one side bordered and varied with a few pale yellow narrow marks; back with three brownish waved bands. Schloetter.

**Ovata.** Shell ovate, a little depressed, one side slightly bordered; back whitish, with crowded yellowish-brown dots and waves, and three oblique darker bands. Schloetter.

**Minuta.** Shell oblong, above tinged with brown; beneath dotted with white; border on one side and teeth of the lip white; above yellow at each end; spire black at the tip. Schloetter.

**Sanguinolenta.** Shell thin, oblong, barred with brown, and dotted at the sides with red. Martini.

**Fasciata.** Shell turbinated, glaucous margined, above gibbous, with transverse brownish bands; throat glaucous. Chemn.

**Regina.** Shell gibbous, glaucous brown, with triangular tesselaceous and whitish spots, and three transverse bands; throat blackish. Seba.

**Undulata.** Shell turbinated, undulated with brownish, clouded with pale ochre, and marked with deeper bands.

*Obtuse, and without distinct Spire.*

**Caput Serpentis.** Shell trianodrical gibbous, and rather obtuse behind. Linn.

*Inhabits Mauritius, and Nusflatella islands. Length an inch and half.*

**Reticulatum.** Shell roundish, gibbous, brown, with white confluent reticulated eyes, and a white horizontal line in the middle of the back; beneath white. Linn.

**Mauritiana.** Shell trianodrical gibbous, behind depressed and acute, beneath black. Rumph.

*Native of the Asiatic islands.*

**Vivellus.** Shell livid, with small white spots. Rumph.

*Inhabits the Indian ocean.*

**Musa.** Shell retuse, gibbous, cinerous, with a longitudinal brown band; teeth of the aperture blackish. Rumph.

*Native of the American and Mediterranean seas. This shell is solid and slightly gibbous.*

**Tigris.** Shell ovate, obtuse behind and rounded before, ferruginous, with deep brown spots, and a yellowish longitudinal dorsal line. Linn.

*Inhabits the Indian and Asiatic oceans.*

**Flammea.** Shell ovate, obtuse behind, and rounded before with waved yellow spots. Valenti.

*A rare species; the native place unknown.*

**Olivacea.** Shell ovate, olive, clouded with yellow, and spotted
Cyprea.

spotted with brown; beneath flat, pale brown; within bluish; teeth of the lip white. Martini.

Femia. Shell ovate, very thin, white, with greenish-yellow dots disposed in rows; within violet. Lill.

LYNX. Shell oblong-ovate with brown dots and a yellowish line; the hind part rather acute, with a rufous mouth. Lill.

Isabella. Shell subcylindrical, with pale yellow extremities. Lill.

Native of Madagascar.

AMBIGUA. Shell pyriform, dusky with paler clouds and spots. Seba.

SCURRA. Shell ovate-oblong, beneath flat, yellowish with greenish and livid confluent drops; the sides varied with scattered brown dots. Martini.

Native of India.

** Umbilicate, or perforated.

ONYX. Shell beneath brown, above whitish. Rumpf.

A small shell found in the Atlantic seas.

CLANDESTINA. Shell with very fine transverse lines, some concurrent. Gmel.

Native of India.

Succincta. Interior lip rounded at each extremity. Linn.

ZYCIAC. Shell beneath pale yellow with brown dots, and two spots of the same at the extremities. Lill.

HIRUNDO. Shell above bluish, the extremes marked with two brown spots. Linn.

- Inhabits the Maldives islands.

ASELLUS. Shell white, with three fulcous bands. Linn. Afrilus, Rumpf.

ERRONEA. Shell with an equal tesselate spot. Linn.

URSELLUS. Shell oblong white, above smooth varied with brown, and marked with two brown dots at the umbilicus or perforation. Linn.

PYRUS. Shell pale brown with paler bands and ochraceous spots, beneath and at the sides fulvous, within blue. Gmel.

MACULOSA. Shell narrow, long, with flesh-coloured spots, above varied with pale fulvous and glaucous spots, the sides chequed. Bonn.

PULLA. Shell thin, with the sides ruffed-brown; above white or pale brown with transverse bands or a pale horizontal line. Martini.

INDICA. Shell cylindrical, marked above with characters, ocelations, and a pale horizontal line; the sides bloom coloured, dotted with black; teeth of the lip brown. Rumpf.

OVUM. Shell thin, oblong, olivaceous, with scattered ferruginous spots; beneath white. Mart.

FELINA. Shell oblong, narrow, plumbeous with ferruginous dots and spots, and paler bands marked at each end with two brown spots. Seba.

ATOMARIA. Shell oblong, snowy dotted with brown; each end marked with two dusky dots. Martini.

NEBULOSA. Shell oblong, gibbous, brown with chequed spots. Lilll.

OCHROLEUCA. Shell thin, ochraceous with paler spots. Bonn.

SCELLATA. Shell thin, cinerous dotted with brown, and marked with transverse elevated lines. Bonn.

FULVA. Shell solid, oblong, fulvous with brown spots disposed in rows, and two dusky bands; the sides and under surface tifiroid. Gmel.

LEUCOSTOMA. Shell oblong, gibbous, clouded with brown and blue, the sides spotted with black; mouth white. Guel.

LUTEA. Shell brownish with two white bands, beneath pale yellow dotted with brown. Gronov.

ZONARIA. Shell ovate, smoothish, yellowish with four brown lunules. Chemn.

Inhabits the shores of Guinea, and is very rare.

** ** Margined.

CRIBRARIA. Shell umbilicate, pale yellow with round white spots. Linn.—Argus minor. Argenv.

MONETA. Shell whitish, with nodulous margin. Linn.


Inhabits the Mediterranean, Atlantic, and Indian seas. This is the species which is filled up in vast numbers by the negro females, three days before or after the full moon, and is used by the native blacks in many parts instead of money.

ANGUS. Shell surronded on the back with a yellow ring. Rumpf.

Inhabits Asia.

CAURIK. Shell with gibbous, unequal, whitish margin, dotted with brown, the back marked with tesselate clouds. Lill.

EROSA. Shell with a jagged margin, yellow dotted with white, the sides with a brownish spot. Lill.

Found in the Mauritus and Ascension islands.

DEROSA. Shell with a jagged margin; flesh colour, with a greenish back marked with fulvous dots, the sides dotted with brown. Gmel.

Inhabits the Mediterranean.

FLAVEOLA. Shell with a jagged margin, yellow dotted with white; the sides marked with scattered obsolete brown dots. Linn.

SPURCA. Shell slightly margined; yellow, with deeper specks, the sides dotted with brown. Linn.

Native of the Mediterranean sea.

OBELONCA. Shell oblong ovate, above blueish dotted, and spotted with brown; beneath, and at the sides white. Bonn.

STOLIDA. Shell cinereous, variegated with tesselate. Linn.

Length an inch and a half. This species inhabits Amboyna.

HELVEOLA. Shell triangularly gibbous, dotted with white, jagged behind, beneath yellow and immaculate. Lilll.

OCELLATA. Shell slightly margined, pale yellow, with black eyes. Lill.

PORARIA. Shell pale violet dotted with white. Bonn.


A small shell found on molusca coasts.

NUCLEUS. Shell margined each side, slightly produced and rugged, with raised tubercles above. Lilll.

MADAGASCARIENSIS. Shell whitish, and produced each side; the back tuberculated and marked transversely with waved lines. Lilll.

STAPHYIAE. Shell somewhat produced, with elevated dots, and without aire; the extremities pale yellow. Argenv.

CICERCULA. Shell produced each side, and sprinkled with raised dots. Lilll.

Native of the Mediterranean and Indian seas.

5 A 2

Globulus.
CYPRESS. See *Cupressus*

**Cupressus.** Shell produced each side and smooth. Gumb.

Inhabits America, e.

**Affinis.** Shell oblong, slightly produced, smooth, yellow, ocellate each side, below. Knorr.

Reflected the same oblong.

**Squalina.** Shell, oblong, white, with ferruginous dots and spots. Lilt.

**Fimbriata.** Shell white, or grey, with obsolete ferruginous spots; transverse bands; lips of the mouth marked with violet spots. Martini.

**Crusta.** Shell gibbous, above bluish, with rufous dots; beneath and at the sides white; lips citron. Gault.

**Rubiginosa.** Shell oblong, white, within violet; back with a ferruginous blotch; each end marked with two pale yellow spots; teeth of the lips yellowish. Martini.

**Miliaris.** Shell thin, short, yellowish green, with milk-white ocellations, and a lateral horizontal line. Lilt.

**Acicularis.** Shell solid, above yellowish, dotted with brown, and marked with a pale horizontal line; beneath milk-white, with impressed dots at the margin. Martini.

**Crassa.** Shell thick, yellowish, with three whitish bands; mouth bluish. Lilt.

**Vinosa.** Shell above white, with a claret stain, and marked with purplish eyes, surrounded with a black circle, and an horizontal white line; within blue. Donan.

Native of the Mediterranean.

**Augustata.** Shell narrow, brown, with reddish spots at the sides. Gault.

**Similis.** Shell oblong, gibbous, yellowish, dotted with white, and marked at the margin with a black spot. Gault.

**Setriata.** Shell convex, bluish-white, dotted with brown; beneath yellow, frizzled on one side. Gault.

**Chinesis.** Shell oblong, solid, variegated, with orange lips. Argent.

**Pusilla.** Shell bluish, spotted with brown, and trifasciated. Argent.

**CYPRESS.** See *Cupressus*

**Cypress, Summer.** See *Chenopodium*.

**CYPRESSA, in Ancient Geography, a place of Gaul, between Arinio and Aurano, according to the Itinerary of Antonine. M. d'Anville fuggets that it was situated towards the bridge of Sorgue.

**CYPRIÆ Insulae,** three barren islands mentioned by Piny, and placed near the island of Cyprus.

**CYPRIAN, ABRAHAM,** in *Biography,* born at Amsterdum about the year 1656, received the rudiments of his knowledge in medicine from his father, who practised surgery in that city. At a proper age he went to Utrecht, where he was created doctor in medicine in 1680. Having practised medicine and surgery for twelve years at Amsterdam, he was called thence to take the chair of anatomy at Franeker. In 1700 he published an account of an extra-uterine fetus, taken from one of the Fallopian tubes, where it had lain, before the parts sophomated, twenty-one months. The woman recovered, but dying some years after, and opportunity being given to Cyprian to dissect the body, he discovered the part in which the fetus had been detained. Cyprian was said to have been very skilful and successful in cutting for the stone, having performed the operation, it is said, on no fewer than 1400 persons. In 1724 was published, in quarto, *Cyftronias Hypogastrica,* in which he gives an account of his method of operating. Haller Bib. Anat. Eloy Diet. Hist.

**CYPRIANUS, THASCIUS CECELLIUS,** was a native of Africa, and as some say of Carthage, where he was bishop in the third century. He was born, probably, before the end of the second century, and in the former part of his life taught rhetoric at Carthage, with great applause. It was his reputation in the exercise of his profession, that his father was frequently sought by a great number of young persons, who had no fortune, and who intended to be magistrates and judges, or to appear as pleaders at the bar. He was not only well acquainted with the principles and rules of eloquence, but he was also eloquent himself; and very probably composed for others arguments or pleadings, harangues or panegyrics, or such other discourses, for which he received an adequate recompense; and he thus acquired not only a competence, but a considerable degree of influence. Upon his conversion to Christianity about the year 246, in consequence of the instruction of Cæcilius, a presbyter of Carthage, whose name he afterwards assumed, he sold his estate and distributed the produce of it among the poor. Soon after his conversion, probably in the year 247, he was made presbyter, and in the following year bishop of Carthage. Such are the dates ascribed to these events by bishop Pearson. Others, however, are of opinion, that he was baptized in the year 244 or 245, and advanced to the episcopate in 248 or 249. His advancement, whatever was the period at which it took place, was an honour which he accepted with great reluctance, at the general and earnest desire of the people of Carthage, though his election was opposed by several presbyters of that church, who afterwards gave him general uncaines. Soon after the commencement of the Decian persecution, A. D. 250, he became extremely obnoxious to the heathen people; and they often clamorously demanded in the theatre, and other public places, that he should be thrown to the lions. This treatment constrained him to retire to some place of safety, where he continued about 14 months, and where he was diligently employed in writing those epistles, many of which are still extant. As the place of his abode was unknown, so that the hostile government was not able to find him, he was proscribed, and proclamation was made at Carthage, that if any one had any goods of Cæcilius Cyprian, bishop of the Christians, he should discover them. When the heat of the persecution abated, in the year 251, Cyprian returned to Carthage; and renewing the exercice of his episcopal office, he held several councils, two of which regulated the treatment of those who had lapsed in the persecution; and others were engaged in settling the question concerning the baptism of heretics; with regard to which Cyprian was of opinion, that all baptism out of the Catholic church was null and void, and that they who had received such baptism only, ought to be baptized when they came over from heretics to the church. In one of these councils there were present 85 or 87 bishops, besides presbyters and others. It was held in 256, and its acts are still extant. About this time a pestilential distemper visited the Roman empire, and extended its destructive ravages to Carthage. During the prevalence of this calamity, Cyprian was indefatigable in the duties of his function; and exerted himself by his discourses and influence in recommending compassion and liberality to those who were distressed. On another occasion, the virtue of Cyprian and of the people under his care, was eminently conspicuous. Several Christians were carried captives by some barbarous people of Africa, who made inroads into Numidia; for whole relief and redemption Cyprian promoted a collection, and raised a considerable sum of money, which was distributed for this purpose. His distinguished character, however, was no security against the violence of his enemies.
When the emperor Valerian became a persecutor of the
Christian, Cyprian was apprehended; and having made an
undisguised confession of the Christian faith before the pro-
confessed Paternus, avouching himself, upon examination,
to be a Christian and a bishop, and declaring that he knew no
other gods, besides the one true God, who made the heaven,
and the earth, and the sea, and all things therein; he was
banished to Carthage in the year 257. On this occasion he had
many fellow-sufferers, several of whom were sent to the miner,
as we learn from a letter of Cyprian, written during his exile.
When Galerius Maximus succeeded Paternus as procon-
700l of Africa, Cyprian was recalled from banishment; and
restored to the possession of his gardens, or country-house,
ne Carthage, which he had previously sold for a sum of
money that had been distributed by him among the poor.
Soon after his arrival, he was ordered to appear before the
proconsul at Utica, about 40 miles distant from Carthage;
but having reason to apprehend a sentence of condemna-
tion, and being fearful of dying in the presence of his own
people, he abdicated himself from his country residence, and
retired into some place of concealment. Upon the procon-
sul’s return to Carthage, Cyprian came back to his gardens,
where he was visited by several citizens of rank, who ad-
vised him to seek some retreat, in which he might be sec-
cure from the malignity of his enemies. Cyprian, how-
ever, was fully prepared for the event that awaited him;
and being apprehended by a band of soldiers commissioned
by the proconsul for this purpose, he attended them to the
palace of Sextus, about 6 miles from Carthage. Refusing
to sacrifice at the command of Galerius, the proconsul,
with the advice of his council, charged him with being an
enemy to the gods, and a seducer of the people, and then
pronounced sentence that he should be beheaded; upon
which Cyprian said “God be thanked,” and he was then
led away to an adjacent field, encompassed with trees, the
boughs of which were loaded with spectators, where he
calmly submitted to the execution of the proconsul’s sen-
tence, September 14, A.D. 258. The whole tenor of
Cyprian’s life after his conversion, which was peaceable,
charitable, and beneficial to men of every character in dif-
tresses, and the manner of his death, in which he appeared
to be undaunted, ready, and willing, without seeking it,
afford a very valuable testimony in behalf of the truth and
excellence of the principles of the Christian religion. His
character was held in such high estimation by his contem-
poraries and by posterity, that the day of his martyrdom
was observed as a festival not only at Carthage, but also in
other places both in and out of Africa. His works consis-
ted of treatises on a variety of subjects, and of Epistles. Cave.

Le Clerc. Lardner.

CYPRIANUS, in Ichthyology, a name given by Aristotle
to the carp. He also called it cyprinus; and Athenaeus,
Oppian, and many other writers, use indifferently the one or
the other of the words.

CYPRIANE, in Mythology, a surname of Venus, because
the island of Cyprus was consecrated to her.

CYPRIANOIDES, in Ichthyology, a species of Clupea;
which see.

CYPRIANUS, a genus of the abdominal kind, distin-
guished by having the mouth small and delineate of teeth:
the gill membrane with about three rays; the body smooth;
and generally whitish: ventral fins often containing nine
rays.

Most of the species feed on worms, insects, smaller fish,
seeds, and earth, usually spawn about April or May, and are
generally considered as palatable and wholesome food.
Some are of the migratory kind, inhabiting both the fresh
and salt waters, while others remain in fresh waters through-
out the year.

Species.

BARBUS. Anal fin with seven rays; beards of the mouth
four; second ray of the first dorsal fin serrated both sides.

A common inhabitant of molt fish waters in Europe,
and easily distinguished from the other species of carp by
the upper jaw being advanced far beyond the lower, and in
having four appendant beards from which the appropriate
name of barbus, Angl. Barbel, is derived. This fish during
summer prefers the rapid currents and shallows of rivers,
and retires at the approach of winter to the more still and
deeper places. They subsist chiefly on worms, small fishes,
and aquatic insects, and live in societies. Sometimes these
fishes grow to the length of two or three feet, and we have
instances on record of their attaining to a much larger size
in some rivers in the south of Europe. Vide Donov. Brit.
fishes.

CARPIO. Anal fin nine-rayed; beards four; second ray of
the dorsal fin serrated behind. Linn. Carp, Willugh.
Donov. Brit. fishes, &c.

There are two principal varieties of this fish, one having
half the body covered with scales, four times as large as those
of the common sort, and the other having the body destitute of
scales. These fish inhabit the slow and sluggish waters of
Europe and Persia, and according to popular report were in-
roduced into England in the year 1514. The usual length
of the carp in our own country is from 12 to 18 inches, but in
warmer climates it often arrives at the length of two or three
feet or even more. Its general colour is yellowish olive,
much deeper, or browner on the back, and accompanied with
a slightly gilded tinge on the sides; the fins violet brown,
except the anal which is tinged with red.

The usual food of the carp consists of worms and aquatic
insects, or when in a course of fattening for the table,
bread and milk. It is an extremely prolific fish, and the
quantity of roe is so great, that it is said sometimes to exceed
the weight of the emptied fish itself. This fish is known
to be extremely tenacious of life, and to live to a vast age,
even to that of 100 or 150 years, and some writers term
not to affirm to the age of 200 years.

The sale of carp constitutes a part of the revenue of the
nobility and gentry in Prufia, Pomerania, Brandenburg,
Saxony, Holstein, and Halheim, in all which countries the cultivation of the carp is for this reason regarded
with particular attention.

GOLFO. Anal fin 11-rayed; cirri two. Linn. Gudgeon,

Inhabitants gentle streams and lakes of northern Europe; is
tenacious of life and remarkably fertile. The length of this
fish is about 10 inches at the utmost, or rarely exceeding
seven or eight, and its principal food consists of herbs, worms,
insects, and the fry of other fish. The colours vary accord-
ing to its age, or the nature of the waters in which it lives.

TINCA. Anal fin, with about 11 rays; tail entire; body
fishes, &c.

This fish appears to be a native of most parts of the globe,
inhabiting chiefly large sluggish waters with a muddy bottom,
and varying much in the tinge of its colours according to the
situation in which it resides. Its general length is about
12 or 15 inches, but grows sometimes to the length of two
or three feet. The usual colour is a deep blackish olive
glossed with gold, the sides and abdomen yellowish, belly
white, and the fins dirty violaceous. The scales are very
small
CYPRINUS.

Small and closely scaled to the skin. The head is rather large; the eyes small, and on each side the mouth is situated a small beard. The flesh is white and soft; though well flavoured.

The supposed variety Cypinus Tincus auratus of Bloch is a very beautiful fish, and is cultivated in some parts of Germany. The colour is a rich orange yellow variegated with fine black spots; fins thin, transparent, and of a bright red colour; the head rather smaller than the common tench. It is found in a state of nature in Siekia and Bohemia, and is from thence transplanted into other parts of Europe, and kept as an ornamental fish in the waters of gardens and pleasure-grounds. Like the common carp this fish delights in warmth, and is very tenacious of life.

BYYNI. Doras fin with 13 rays; the third thick and horny; tail linear and bifid, cirri four. Linn. Folk.

Length about 12 inches; shape oblong, with the head rather compressed; back and abdomen flopping; colour silvery; lateral line curving upwards; anal and dorsal fin red, with the base white; the tail white with a thickish dull-red margin. This species is a native of the Nile. The Egyptians know it by the name of Byyni, and esteem it an excellent fish for the table.

BULATMAI. Anal fin eight-rayed; second ray of the doras fin very large, and not serrated; cirri four. Gmel.

Inhabits the Caspian sea, and is a rare species. Its size is that of a common carp; the colour of cell blue with a gloss of gold beneath, inclining to a silvery cast; scales middle size; head oblong, brownish above; lateral line slanting; doras fin blackish; pectoral greyish with reddish tips; ventral white at the base and red at the tip; anal red, with whitish base; tail reddish brown and frayed.

CAPOTA. Anal fin nine-rayed; third ray of the doras and anal fin long, the former serrated downwards; cirri two. Gmel.

Inhabits the Caspian sea, and ascends rivers in the winter; its length is about 12 inches; the body comprised and oblong; scales rounded; moderate, smooth, frayed, silvery dotted with brown; those on the belly smaller and white.

MURSA. Anal fin seven-rayed, the first very long; third ray of the doras fin long, thick serrated backwards, beyond the middle; cirri four. Gueldenstaedt.

About 12 inches long; its habit resembles that of a pike; colour olive gilded, shaded above with dusky; abdomen white; anal and ventral fins white, spotted on the upper part with brown; the rest of the fins brown. Inhabits the Caspian sea.

CAPITO. Cirri four; third ray of the doras fin serrated behind; sides and lower fins whitish. Gueldenstaedt.

Much allied to the barbel, but rather more compressed, and with a longer and broader head in proportion; snout more obtuse; beards longer, and eyes larger; and the doras fin serrated lower than in the barbel. Found in rivers running into the Caspian sea, particularly the Cyrus.

* Tail nearly even at the end.

CARASSUS. Anal fin ten-rayed; lateral line straight. Linn. Crucian carp.

Length from eight to ten inches, of a deep form, very thick, colour deep oliveaceous yellow with a slight silvery tinge on the abdomen; fins dull violet; the tail slightly frayed with obtuse lobes. This is a native of many parts of Europe, and inhabits ponds and large flagrant waters. The Crucian carp is considered as a coarse fish for the table in this country.

CEPHALUS. Anal fin eleven-rayed; body nearly cylindrical. Gmel.

Inhabits fresh waters of Europe, frequents deep holes of rivers, and is very shy; its principal food consists of worms and insects. Grows to the weight of five or six pounds.

GIBBIO. Doras fin with twenty rays; tail undulate. Bloch.

Native of Germany and other midland parts of Europe, inhabiting lakes and rivers, and seldom exceeding eight or ten ounces in weight. The body is broad, and elongated, above blueish, the sides dull, beneath silvery; and the scales large; it is very fertile, and tenacious of life, and from its habits is an easy prey to ducks and water-fowl.

SERICEUS. Doras fin with ten rays; anal eleven; tail reddish brown. Gmel.

Found in great abundance in the low and flagrant waters of the Dauria. This is a small species measuring an inch and a half in length; the body shaped like the Crucian carp; the colour silvery blueish or pale violet, with a broad greenish-blue stripe each side, and pale rosy abdomen.

** Tail quadripartite.

QUADRIBUSUS. Sanguineous; fins rosy; tail four-lobbed. Cepede.

Described and figured by Cepede as a species; this kind may however prove to be only a variety of the following.

**** Tail tripartite.


This beautiful fish is a native of the southern parts of China, and is particularly found in the province of Kiang, where it exists in a natural state in a large lake situated near a mountain at a small distance from the town of Tchouchang. From this spot it is diffused into all parts of that extensive empire, and is considered as one of the most elegant ornaments which can be introduced into the gardens and parks of persons of distinction. The Chinese ladies in particular are laid to spare no pains in the cultivation of this beautiful animal.

No fish is subject to so many variations in its domestic or cultivated state as the gold fish. The most general colour is a rich and splendid golden hue, tinged with scarlet above and silvery beneath; in some it is marked with dark patches of black or blue, or sometimes the whole back is uniformly tinged with a dusky hue. The back fin is occasionally wanting, or consisting only of a few rays, and the tail varies extremely in its general form.

The gold fish has long been a favourite in this country, and breeds in our climate with almost equal facility with the carp. In a domesticated state it is fed with bread crumbs, small worms, and aquatic fish, or the yolk of eggs dried and powdered. These fishes ought not to be exposed to feral food, they must also be supplied with a change of water, and should be kept in vessels of sufficient width to permit a free access of air, and yet so formed by curving inwards at the edges as to prevent the fish from escaping.

The gold fish is said to have been first introduced into England about the year 1691, though it was not generally known till the year 1728, when a number were brought over and presented to Sir Matthew Decker, by whom they were distributed into various parts of the kingdom.

MACROPTHALMUS. Scarlet; eyes protuberant; fins half white. Bloch. Telecope carp. Shaw, Nat. Mfc.

Allied to the gold fish and equally beautiful; its general colour fanghuese red; head short; eyes extremely protuberant, and apparent in some degree extensile; body covered with very large scales. This is a native of China, where it is kept in a similar manner with the gold fish, and perhaps
perhaps with propriety be considered as a variety of that fish.

**** Tail bifid.

REGUS. Anal fin eleven-rayed; dorsal fin extending the whole length of the back. Gmel.

About the size of a herring, the body cylindrical; scales above golden, sides silvery. Inhabits the sea round Chili.

CAUCUS. Anal fin thirteen-rayed; body tuberose, and a little forked. Gmel.

Inhabits the fresh waters of Chili, and measures about eighteen inches in length.

MALCHUS. Anal fin eight-rayed; body conic and blue.

Length twelve inches. Inhabits same waters as the last.

RIVALIS. Anal and dorsal fins eight-rayed; body spotted with brown. Gmel.

Found in small streams running down the Alpaca mountains. The length of this fish is two inches; the body rather compressed and silvery; scales scarcely visible.

LABEO. Anal fin seven-rayed, dorsal eight-rayed, and pectoral nineteen.

Gmel.

Inhabits the rapid and rocky rivers round Dauria which discharge themselves into the Eastern sea. This fish swims rapidly and is highly prolific; its usual length rarely exceeds three feet. The body is roundish, somewhat compressed, and covered with large scales. Fiash excellent.

LEPTOCEPHALUS. Anal fin nine-rayed; dorsal eighteen-rayed. Gmel.

Found in the same rivers as the last, and is about the same size as the last.

CHALECOIDES. Anal fin nineteen-rayed; dorsal twelve.

Gmel.

Native of the Caspian sea; about twelve inches in length; the body of a compressed form, and oblong; scales rounded and forked; colour above greyish and silvery-green, spotted with brown; the sides shining silvery, beneath milk-white.

GALIAN. Anal fin with seven, dorsal eight, and pectoral fourteen rays. Gmel.

Length three inches; body olive, spotted with brown; beneath bright red; flesh good when fried. This inhabits the fliny rivers in Siberia.

NICEUS. Anal fin with seven, dorsal eighteen rays. Gmel.

This kind inhabits the Nile; body reddish.

GONTYCHUS. Anal fin eight-rayed; body cylindrical.

Gmel.

Inhabits the Cape of Good Hope.

PHOGLUS. Anal fin with eight rays; body pellucid; tail with a dusky spot near the base. Gmel.

Found in gravelly streams in Europe and Siberia, and keeps in shoals near the surface. The species is small, scarcely ever exceeding the length of three inches; it feeds on herds and worms, grows slowly, is very fertile, and is the favourite food of pikes.

APHYA. Anal fin with nine rays; iris red; body pellucid. Gmel.

Inhabits the northern seas of Europe; length from about two inches to four inches and a half.

LEUCICUS. Anal fin with ten, dorsal fin with nine rays. Linn. Dace, Penn.

Lives in still deep rivers of England, France, the south of Germany, Italy, and Siberia. The caudal length is about six or eight inches, but it sometimes grows to the length of eighteen inches. It feeds on worms and insects, is very fertile, and the prey of more rapacious fishes. The flesh is white, and in some estimation.

DORULA. Doralf and anal fins ten-rayed. Gmel.

Inhabits the fresh-water lakes of Denmark, Germany, and France; and in the spring ascends rivers, and feeds on leeches, as well as herbs. The body is narrow, oblong, above greenish, beneath silvery-blueish; the young males in milting-time spotted with black; scales moderate, and dotted at the edges with black. Length ten inches.

GRISLANGE. Anal fin eleven-rayed; fins whitish. Gmel.

Inhabits European lakes.

IDRASUS. Anal fin twelve-rayed; ventral fins deep red. Gmel.

Found in lakes in Sweden.


Inhabits deep still rivers with a sandy bottom, in Europe, and adjacent parts of Asia. This fish seldom exceeds the weight of a pound and a half. It spawns in May, is very fertile, and feeds on worms and herbs; the eggs are greenish, and become red by boiling. The body is greenish-black, beneath paler; scales large and easily deciduous; flesh white and well-flavoured.

IDUS. Anal fin thirteen-rayed and red. Gmel.

Inhabits clear fresh waters in northern Europe, chiefly the larger lakes, from whence it migrates up rivers in the spring, and is sometimes found in the Caspian sea. Length from eighteen inches to two feet.

ORFUS. Anal fin thirteen-rayed; gill covers spotted with red. Gmel.

Lives in clear streams of England, Russia, and Germany; feeds on worms, insects, fat earth, and the spawn of other fishes; body above fafferon; sides and belly golden-yellow, with red marks.

BUCCHENAGLA. Anal fin with nineteen rays. Gmel.

Inhabits lakes of Germany and Sweden. The body above blackish, sides compressed; scales large, and silvery; flesh white. Length from twelve to fourteen inches.

EYTHROPHALTUS. Anal fin fifteen-rayed; fins red. Gmel.

Native of northern Europe and the Caspian sea; length about twelve inches; the back greenish-black, sides greenish above the line, beneath silvery. This species is fertile, and feeds on worms, insects, and aquatic herbs. Scales large, thin, and silvery.

JESUS. Anal fin with fourteen rays; snout rounded. Gmel.

Inhabits the most rapid parts in France, Germany, Hungary, and Russia; it swims with great swiftness, and is exceedingly fertile. The body is blue above, the sides paler; the scales large, and blue at the lower edge.

NASUS. Anal fin with fourteen rays; snout prominent. Gmel.

Found in the larger lakes of Russia, Germany, Italy, and the Caspian sea; ascends rivers in shoals in the spring; and weighs from one to two pounds. The body is oblong; blackish above, beneath silvery; the belly black within.

ASPUS. Anal fin sixteen-rayed; lower jaw longer and incurved. Gmel.

Native of Europe and the Caspian sea; it delights in fresh and gentle streams, and grows to the weight of about twelve pounds. The flesh is white, soft, fat, and well-taied.

BIJUNCTATUS. Anal fin with sixteen rays; lateral line red, with black spots in a double row. Gmel.

Inhabits fliny rivers of Germany. This species is small, and feeds on worms and herbs; the upper part of the body is dusky-green, the sides greenish-white; scales small, and dotted with black.

AMARCUS.
AMARUS. Pectoral and ventral fins with seven bony rays. Gmel.

This inhabits the same country as the preceding; the body is pellucid, silvery, above greenish-yellow, the sides above the lateral line yellow; scales dotted with black. The flesh of this fish is bitter.

AMERICANUS. Anal fin with eighteen rays. Gmel.

Native of Carolina. The body blue and silvery; lateral line arched towards the belly; tail bifid.


The bleak is abundant in many of our rivers, and in those of the north of Europe in general; the flesh is in some esteem, but it is chiefly taken for the sake of its beautiful silvery scales, which artists make use of in the manufacture of artificial pearl.

This fish grows to the length of five or six inches, or sometimes even more. At certain times in the summer it is infested with a species of gordius, which increases in a short time to a vast size, and oftentimes destroys it. Fishes so infested rise to the surface of the water, where they leap and tumble about in the greatest agonies, and are known in this flat to the fishermen by the name of mad bleak.

The small fish called the white bait, and which appears in immense numbers, during the month of July, in the Thames, near Blackwall, is generally believed to be the fry of this fish; but has been lately ascertained by Mr. Donovan to be the young of the common hadd. Vide Donov. Brit. Fishes. See article Clupea.

VIMBA. Anal fin with twenty-four rays; snout truncated and prominent. Gmel.

Inhabits the Baltic sea, and migrates in summer into the rivers of northern Europe. The body is silvery, above blueish, beneath tinged with green.

BRAMA. Anal fin twenty-seven-rayed; fins brown.

Linn. Bream.

Inhabits lakes and still rivers in Europe and the vicinity of the Caipian sea. This fish feeds on worms and aquatic plants. In spring it approaches the shores, and ascends rivers in vast shoals with a rushing kind of noise. The body is blackish, tinged more or less with green on the upper part, the sides yellowish, belly white. The flesh is inedible, and not therefore in request.

CULTATUS. Anal fin with thirty rays; lateral line flopping; belly very sharp. Bloch.

Native of Sweden, Prussia, and Germany. Its length is eighteen inches; the color above grey, beneath silvery; flesh white. The species is rather scarce.

BJÖRKNA. Anal fin with thirty-five rays. Gmel.

Inhabits the lakes of Sweden, and grows to the length of five inches.

FARENSUS. Anal fin with thirty-seven rays; iris yellow. Gmel.

BALLERUS. Anal fin with forty rays. Gmel.

The body of this species is thin; above dusky-blue; sides yellow, beneath silvery; belly reddish. Inhabits the lakes of Europe, and the Calpian sea.

LATUS. Very broad; anal fin with twenty-five rays. Gmel.

Inhabits in vast shoals the lakes and still rivers of northern Europe. This species is very fertile, and feeds on worms and herbs; the body thin, white, above bluish; weight about a pound; the back is arched and carinated at the anterior part.

CYPRINUS MURENULA, a name given to the Salmo Mur- enula; which see.


Gen. Ch. Cal. Perianth of two leaves, one of which is erect, the other dependent; the latter often cleft. Cor. Petals two, alternate, with the calyx declining, often twilled; lip large, inflated, hollow, ventricose, obtuse. Stam. Filaments two, very short, inserted into the style, under two opposite lobes; anthers two-celled, roundish. Pyl. German inferior, obvolute, gibbous, twilled, with six angles; style cylindrical, with a terminal lobe, variously shaped, covering the hollow triangular stigma. Peris. Capsule obvolute, obtusely triangular, of one cell, and three valves. Seed numerous, minute, ranged along three linear receptacles.

Eff. Ch. Calyx two-leaved, spreading; lip large, inflated, hollow.

The most magnificent and admired genus of the orchis family, and distinguished from all the rest by being truly diandrous, as well as by its inflated bladder-like lip.

Eight species are now enumerated by Swartz. C. caleoEus, Engl. Bot. t. 1, is the only English one. This grows sparingly in the counties of Durham and Yorkshire; more frequently in Switzerland, in rocky, mountainous, rather shady places. C. parrisiiforum, an American kind, Redouté Lilacs. t. 20, is nearly related to it. The last-mentioned country probably affords several species, besides C. spectabile often figured in botanical works. C. acuEe. Curt. Mag. t. 193, is another American species, distinguished by a cleft in its lip. C. centricoflum of Swartz. Gmel. Sib. t. 1. f. 2, and C. macranthos of the same author; Amm. Ruth. t. 23, both natives of Siberia, have been confounded with C. caEeeus, but very improperly, as has his C. guttatum. Amm. Ruth. f. 22, of which we have never seen specimens, except in Pallis’s rich Siberian herbarium, now in the possession of A. B. Lambert, eqq. V.P. L.S. C. japonicum is known only by Tiumberg’s description and figure in his Ce. Plant. Jap.

Such species of this beautiful genus as have been introduced into our gardens succeed tolerably well in a mixture of bog-earth with much loam, in a shady moist situation. C. spectabile will bear more fun, and even artificial warmth, than the reef.

CYPRUS, or ColERFFINUS Codex, in Biblical History, a copy of the four gospels, brought from the isle of Cyprus, and referred to Simon the 19th century. He collated it, and his extracts were inserted in Mill’s edition. Wetstein, who notes it K, in the first part of his New Testament, says, that it is a Latinizing MS.; but Michaelis denies the charge. Montfaucon has described this MS. in his “Paleographia Graeca,” and has given a fac-simile of its characters. He refers it to the 8th century. It is written in uncial letters, with certain marks over them. It is at present in the royal library at Paris, where it is marked 63. Michaelis’s Introduct. by Marth, vol. ii. and iii.

CYPRUS LAPIS, a kind of adamant brought from Cyprus, with which the ancients used to perforate other gems.

CYPRON, in Ancient Geography, a place of Judæa, in the tribe of Benjamin, built by Herod in honour of his mother, and situated in the plain of Jericho, near that city. Joseph. Antiq. i. xxxi. c. 9.

CYPRUS, in Geography, an isle of the Mediterranean sea, situated in the great gulf which terminates this sea to the East. N. lat. 35° E. long. 33°. The length of this isle is about 70 leagues from East to West; its greatest breadth from N. to S. is 50 leagues; and its circumference
CYPUS.

is nearly 180. Towards the north, and at no considerable distance, are the winding coasts of Caramania, formerly Cilicia; those of Egypt, more remote, face it to the south; and the shores of Syria, on which the Mediterranean vessels, are not far from it to the west. Some of the ancients think that it formed a part of the land of Phoenicia, from which it was detached by some violent commotion of the globe, similar to that which separated Sicily from Italy, and several other islands from different parts of the continent.

Dr. Woodward, however, considers this to have been an island ever since the deluge of Noah. (Nat. Hist. of the Earth, p. 112.) Pliny (H. N. l. v. c. 31.) enumerates several of the many names by which this island was distinguished. It was called Acamia, from one of its promontories; Amathus, Paphia, and Salamis, from three of its ancient cities; Macara, or the fortunate island, from the fertility of its soil, the mildness of its climate, the inexpiable beauty of its plains, and the richness of its productions; Colinia, or Collinia, from its many hills; Sphencia, from its ancient inhabitants, the Sphenes; Erota, or Copper island, from its copper-mines; Ceratia, or Ceratia, horn island, from the multitude of narrow capes for points of land of which it is surrounded, and which bear some resemblance to long horns projecting into the sea; and Cyprus, known to the Greeks under the appellation of Kupros and Kupris, which they gave to Venus, indicating that the worship of this goddess came to them from this island. This latter name has been derived by some from the Greek cryptos, signifying hidden, because the island was often concealed by the waves of the sea from the eye of the sailor; by others it is supposed to have been formed from Cyrus, who is said to have founded here the city of Aphrodia; but 600 years before the age of Cyrus, in the age of Homer, it was known by the name of Cyprus. Some are of opinion, that the abundance and beauty of the copper contained in the bosom of this island occasioned its receiving the name of a metal, which, being found formerly in metallic masses, and next difficult to melt than iron, was employed, long before, for fabricating weapons and implements of agriculture. Others have discovered the origin of Kupros, in the name of a shrub, celebrated by the ancients, still much used among the modern Orientals, and in which the island of Cyprus carried on a considerable traffic. This tall shrub, called ἐφερ by the Hebrews, and by the Greeks ἄφερος, is the branț, or βαρνα, of the Arabs, and the κανα of the Turks; the Lavandula Clavata, folia subfofllibus evocatis, vorticem acutum of the Linnaean system. This shrub embellishes and perfumes with its blossoms the gardens of the island of Cyprus, like those of Upper Egypt. See the above-mentioned articles.

The principal cities of Cyprus were, according to Ptolemy and Strabo, on the north side of the island, Asiae, deriving the name from a queen of Egypt, to which country Cyprus had been long subject; Solai or Solai, is called, from respect to Solon, the famous Athenian lawyer, in which was a famous temple consecrated to Venus and Isis; Lapithus, or Lapathus; Aphrodias, Carpeia, Cerines or Cedurna, and Tremitus; on the eastern coast were Salamis, afterwards called Coniantia, supposed to be the site of the present Famagusta, and the small islands Clides; two, according to Strabo, and three, according to Pliny; on the south coast were Throni, Citium, Malun, and Amathus, consecrated to Venus, and having in its vicinity copper-mines, and a famous temple consecrated to Venus and Adonis; on the west side of the island were Palepaphos, or Old Paphos, where Venus is said to have first appeared after she was formed out of the froth of the sea, peculiarly sacred to this goddess, and where the young women professed themselves to strangers that came on shore, in order to raise money for their patrons, and Neapaphos, or New Paphos, famous for its harbour, and a fatal temple dedicated to Venus, ruined by an earthquake, but re-built by Augustus, and called Augusta. The island towns mentioned by Ptolemy are these, viz. Crethus, Themistus, and Tanathus, or Taminus, to which Strabo adds Limena. The following cities, whose precise situation is not unknown, are mentioned by Pliny, Diodorus Siculus, Pauly, Stephanus, and others; viz. Cingara, Mavimi, having a king of its own, Galg, where Venus was worshipped; Euboea, Creusa, Erethias, Leucadomia, Tegetibus, Memina, Hyle, Tambro, Leirm, or Leuten.

By the ancient geographers, Cyprus was divided into four districts, or provinces; viz. Paphia to the west, Amathus to the south, Lapitha to the north, and Salamis to the east. It was afterwards divided into 12 provinces by the princes of the Lusignan family, who were put in possession of it by Richard I. of England, and held it for 17 generations. These twelve divisions were denominated Nigrampogona, Paphia, Andima, Limnias, Maforum, Salmas, Melhora, Citoasis, Pentella, Carpala, and Ceina; so called from the chief cities of each district; besides which cities, and several other towns or cities, the island contained no fewer than 500 villages.

This island was first discovered by the Phenicians, as we learn from Eratosthenes (apud Strabonem, lib. xiv.) about two or three generations, according to Sir Isaac Newton's computation, (Chronology apud Oper. vol.) before the time of Afterius and Minos, kings of Crete; or about the year 1045. B. C. When the island was first discovered, it was, as Eratosthenes represents it, so overgrown with wood, that it could not be tilled; and the Phenicians first cut down the wood for melting copper; but afterwards, when they began to navigate the Mediterranean without fear, they applied this wood to the construction of ships, and even large fleets. Herodotus also supposes that this island was first peopled by the Phenicians. But Josephus says, that the descendants of Deitum, the son of Jahan, and grandson of Japhet, were the original inhabitants of Cyprus, and that they laid the foundations of the city of Citium, the most ancient in the island. The learned Bryant, likewise, intimates, that the Cuthites (see Cusus) were among the first settlers in this island. Sir Isaac Newton also intimates, that the Phenicians were accompanied in their migration by a sort of men who were skilled in the religious mysteries, arts, and sciences of Phoenicia, and who settled in several places under the names of Curetes, Corybantes, Telechines, and Idi Daetical, about the period above-mentioned.

In process of time, other nations, invited by the fertility of the soil, came and settled here, viz. the Phenicians, Athenians, Salamemians, Arcadians, and Ethiopians; for Herodotus says (lib. vii.) that Cyprus was inhabited by colonies from these different countries. The government of Cyprus was, without doubt, monarchical; for we find that kings reigned here in the earliest ages. The first monarch mentioned in history is Cinyras. (See his article.) However, Cinyras, and his successors, whose names are unknown, were not kings of the whole country, but only of Paphos, and the adjoining province. At an early period, the realm of Salamis was the most powerful in Cyprus; the Salamemian princes having, in process of time, subdued the whole island. Till the time of Cyprus the Great, the island was parcelled out among several petty kings, each of whom reigned with an uncontroll ed authority. Cyprus subdued them by his lieutenants, and leaving them in possession of
their respective dominions, imposed upon them an annual tribute, and obliged them to supply him and his successor, with men, money, and ships, whenever they were required. The Cypriots continued a submission to the Persians till the reign of Darius, the son of Hystaspes, when they made an attempt to throw off the yoke; being instigated to this revolt by a king of Salamis, about the year 495 B.C. Cimon (see his article) received a commission from the Athenians to drive the Persians from the island of Cyprus, and, in pursuance of his victories and of the articles stipulated between Artaxerxes and the Athenians, the Persians withdrew all their garrisons from the island, leaving the several kings, among whom it was parcelled out, to govern their respective kingdoms, without any dependence on the kings of Persia. Accordingly, Cyprus remained free from any foreign yoke till the 12th year of Artaxerxes Mestor, king of Persia; when it was again subjected to the Persians, together with all the Greek cities in Asia. In the year 487 B.C. Eunarus, son of Nicocles, who had been raised to the throne of Salamis, eminently distinguished by his natural and acquired talents, recovered the throne from which his father had been driven by a treacherous usurper; and by his valour and activity, made himself master of the greater part of the island. This prince having been annihilated by one of his counsels, was succeeded by his son Nicocles; and Nicocles again by his son Eunaraos, who was expelled from the throne by his uncle Protagoras. On this occasion Eunargas joined the Persians, in hopes of recovering his crown. Cyprus had at this time nine kings, subject and tributary to the king of Persia, who all joined in the conspiracy for flushing off the Persian yoke, and making themselves independent, each of them in his own city. Protagoras made a vigorous defence, and by a compromise with Ochus, the king of Persia, was confirmed in the throne of Salamis. From this time, to the reign of Ptolemy I., no mention of the Cyprian kings occurs. They all, without doubt, submitted to Alexander, upon the same terms which had been granted them by the Persian monarchs, as Arrian (De Exped. Alex.) seems to intimate. Upon the death of that conqueror, and the partition of his conquests, Cyprus fell to Antigonus. But, during his absence, Ptolemy, the son of Lagus, having invaded the island with a powerful fleet, reduced the greater part of it, and obliged the kings, who reigned there, to do him homage. From this time, 311 B.C. the kings of Cyprus should rather be called governors than foreigners, being subject to, and vassals of, the Egyptian monarchs. Ptolemy was not long in possession of Cyprus, before Antigonus apprized of its fertility and value, commenced his son Demetrius to attempt the recovery of it. Accordingly, Demetrius, having raised a considerable army, and equipped a numerous fleet, invaded the island; and, after gaining several advantages, he totally defeated Ptolemy in a naval engagement, so that he was compelled to return to Egypt with the small and shattered remnant of his fleet. Upon his retreat, the whole island of Cyprus, with all the forces, shipping, and magazines, belonging to Ptolemy, fell into the hands of Demetrius. As soon as Antigonus received the news of his son's success, he assumed the title of king, and conferred it likewise on his son. After an interval of eleven years, Ptolemy again recovered the island of Cyprus; and from this time, 293 B.C., it continued subject to Egypt, and for a short interval to Syria, till it was unjustly seized by the Romans in the year 58 B.C. Founding their pretended claim to the island on a testament of Alexander, late king of Egypt, who died at Tyre, and left to the Roman people his heirs, but really willing to gratify the private revenge of Clodius and to indulge their own inelastic avarice; the Senate passed a decree for feitiing Cyprus; and Cato was deputed to execute it by dethroning the king, who had been declared a friend and ally of Rome, and had never done any thing to incur the displeasure of the haughty and imperious republic. Cato, on his arrival, took undisputed possession of the island in the name of the republic, and feit the treasury which he found amounting to 7,000 talents, or about 1,358,350l. sterling, which were carried to Rome, and lodged in the public treasury. From the emperors of the west, this island passed to those of the east, and became a part of the Byzantine empire. From them it was taken by the Arabs, under the reign of Herachius, and restored to the Byzantine emperors, who, to celebrate the happy event, divided the island into five parts, and established himself as its sovereign, amassing the magnificent title of emperor. The weakens of the empire for a long time favoured the views of the usurper; but in 1001, Richard I., king of England, expelled him from the sovereign, threw him into prison, where he was confined with fetters, and, as some say, deprived of his life. Being afterwards sold by this monarch to the Templars, difference of religion caused the inhabitants to revolt and took up arms against their new sovereign; upon which the knights apprehending that they should not be able to retain possession of it, surrendered it back to Richard, who conferred it on the house of Lusignan, as a compensation for the losses of Jerusalem. In 1460, Charlotte, the half heiress of Guy de Lusignan, was expelled from it by James, her natural brother. She married Louis de Savoy; and on this account the dukes of that country assume the title of king of Cyprus. After the death of James, Catherine Cornaro, his widow, having no male children, transferred the kingdom in 1489 to the republic of Venice. But the Venetians did not long enjoy their acquisition; for Sultan Selim wrested it from them in 1571; and since that epoch it has made a part of the Ottoman empire. This change of proprietors and rulers was accomplished on the part of the Ottoman forces with an attendant circumstance of savage cruelty. After having captured six assaults and experienced the ravages of 500,000 souls, the valiant Bregadino, commander of the Venetian army, being forced to yield, capitulated Aug. 1., 1571. The conditions, previously settled, were honourable to the besieged, and worthy of their prolonged and brave resistance; but at the moment when the European general went into the tent of Mahommed, the general of Selim, in order to announce his departure, and take leave of him, the barbarian caused him to be fixed, and delivered up to the most cruel tortures. He was stripped naked, placed on a tumbrel, and his hair, dressed with straw, was hung to the yard-arm of a galley, as an eternal testimony of the horrible inhumanity of the Turks, and a signal of vengeance to civilized nations. This beautiful and productive island is divided lengthwise by a chain of mountains, the most remarkable of which is Mount Olympus, or as it is called by the Greeks, Trogodos, Troodos, or Trobus. The principal towns are Famagusta and Nicoclia, the latter of which is its capital and the residence of its governor. Other towns of some note are Larnica, where the convuls and merchants of European nations fix their residence, and near which are Chito, the ancient Citium, and the hamlet of Salterna, so called from a large lake near the sea in which salt is made; Lousad, formerly Nemiros, frequented merely on account of its harbour, in the confines of which the British vessels are made, and which is the emporium of all those in the island who are concerned in trade; and Amba or Bafa, the ancient Paphos; Caines, the ancient Camea, with a bad harbour which serves, however, for the trade of the island with Carmania. On a survey of the present state of this island, and on comparing it with the accounts of
of former times, one cannot forbear regretting the penurious and defolating influence of a despotic government. Somonini very justly observes, that the riches which are contained in its bofom, are more deeply buried by despotism than by the earth with which they are covered. The search after mines is strictly prohibited; and copper, of which it was formerly so productive, remains useless in the bowels of the mountains that contain it, as well as zinc, tin, iron, and other minerals, to the abundance of which it owed its celebrity. The mines of this island in ancient times afforded gold, but they have been so long abandoned, and tradition is so carelessly aligned the places where they were found. The copper of Cyprus was in former ages so much found in the world, and its rich and primitival mines furnished the first bricks of that metal which were brought into use. The blue or azure vitrul, which still retains the name of Cyprus vitrul, was found in abundance in the copper mines. The ancient Tarsasses flourished a great quantity of it, but the belt was drawn from Cherubus, a village near a gulf of the same name occupying the site of Acamania; the vitrul mines of which were well situated towards the end of the 17th century. The iron mines he fortified, and in a quantity sufficient for the supply of the Cypriots themselves and the trade of the neighbouring countires. In the rocks is also found a very fine rock-crystal called the Baffa or Paphian diamond, from the place where it is procured. But the place is always surrounded by Turkish guards, who prevent its being carried away. Some of this crystal is likewise found in the mountains that lie in the vicinity of Cape Chromatii and of Cape Alexandretta. The bowels of the high mountains contain nicks emeralds, amethysts, peridots, opals, &c. The Sceythian Jasper was esteemed the belt among the ancients, next to that was the Cyprian, and last of all the Egyptian. The river Pedicus, which has its source in the mountains near Nicofia, rolls down, with its limpid waters, fragments of very fine red Jasper. The quarry which furnishes sconce lies in the mountain of Acamania, near Cape Chromatii, and it is still as plentiful as ever. Tale is common, especially near Larern; and there are numerous quarries of plaiter. The quarries of marble afford it in quantity sufficient for building; but fearlessly any are now worked but those which yield a common white marble, of little confluence. The Turk allows the unfortunate inhabiter to trade; in some of the treasures which the earth conceals but yellow ochre, marble, and terre verte, sublimates common in Cyprus, and which are employed in coach-painting. The trade of coarse silk was formerly a source of considerable revenue, but fell down, near the hamlet called Sartera, where it is found, was formerly three leagues in circumference; but the trade being diminished, the lake is reduced by drainage and culture to about a league in circuit. Some few country banks suffice for the conveyance of the quantity which enters into the export-trade, whereas the Venetians annually furnished it of the cargo of 70 large ships. The effects of despotism are no less apparent in the productions of the surface than those of the bowels of the earth. Olive trees, in consequence of languishing culture, are much less common than they were in former times, their fruits no longer afford sufficient oil for the supply of the inhabitants, whereas it was formerly very considerable branch of commerce. Immense reeds, in the form of eiders, and coated with an impermeable cement, fill up the innumerable Larnica. Mulberry trees still form small woods in certain quarters of the island; but in several others the culture of them is utterly abandoned. The silk trade, however, though less flourishing than it was before the invasion of the Turks, is still of some importance. At Famagusta, where the market for this commodity is held, there are annually sold about 25,000 bales, of 320 lbs each, including white silk, gold, yellow, sulphur-yellow, and orange-coloured. The flax is likewise thrown into trade, and like the silk itself, it is dispatched to the ports of Turkey or Europe. The cereb, or St. John's bread-tree, furnishes pods, which are an article of considerable commerce to Syria and Alexandria. These trees are cultivated in great abundance in the environs of Larnica. Most of the plains, of which cotton constitutes the wealth, still preserve some traces of that culture; the whole island now affords to commerce about 3,4, or 5000 bales of cotton, according to the goodness of the season; whereas under the government of the Venetians, the annual quantity at these bales amounted to 70,000. Cyprus cotton is the most valuable, as the finest of the whole, and bearing a higher price. In Cyprus, the feeds of the cotton tree are drawn in the month of April, when the plants appear above ground, they are thinned and weeded, and the earth is loosened about them in the course of the summer, towards the month of October the pods open, and the silky down which they afford is then separated from the seeds which it surrounds. A moist atmosphere, and frequent long continued rains, are unfavourable to the cotton- tree; whereas a strong heat is very favourable to it; serving to promote the dazzling whiteness of the down, and contributing to the fineness and fulness of the silk.

At the time when the Venetians possessed the island of Cyprus, they made large plantations of sugar-cane, which succeeded as well in Egypt, in the belt districts of the island, as that of Paphos, on the road from Larnica to Famagusta, where the best cotton in the country also grows, and near Lefka in the gulf of Pantala. Proper buildings were erected on the same spots for refining the sugar, and great advantages must have been derived from these plantations, and these sugar-merchants, in a situation so near Europe. The foil of Cyprus in various parts of it is also favourable to the vegetation of the coffee-tree, and Somonini thinks it might be here cultivated with success. The goodness of the soil is evinced by various circumstances. The gardens are full of pot herbs of a very good quality; calendula are excellent, and vegetables are so abundant as to supply ships with an ample stock. Orange-trees, lemon-trees, pomegranates, and other fruit trees abound, and form groves round the habitations. Wheat and barley were formerly some of the principal articles of export; but now they hardly suffice for the subsistence of the inhabitants, even when they cleanse the destructive ravages of the grashoppers which infest in their clusters over the plains of the island, and destroy their produce. On that account, every kind of vegetable daily increases; and they even grow the very bark of the trees. It is therefore partly by the oppression of the government and partly by the devours ravages of these insects, the destruction of which the Turks forbid, because they regard them as sent by the Almighty, that we are to ascribe the state of languor and amall decay of the agriculture of Cyprus. These swarms of grashoppers, says Somonini, arrive from the continent, where, according to the opinion of M. Halletquitz, they must be formed in the middle of the deserts of Arabia, where they deposit spores and implanted by the winds. The first which they have 70 cents from the coast of Spho to Cape St. Andre after the wold eastern point of the island of Cyprus, is not more than from 22 to 25 leagues; and a gale of wind may easily carry light insects, allowing themselves with their wings, and polluting much strength and agility.

In the island of Cyprus they also possess a large amount in the Levant-trade, with which quantities are there fixed red, clove-pointed, which are sold in many parts without culture; a small quantity of coconuts, and opium, cultivated at the
The foot of Mount Olympus, and purified and packed up at Nicotia. The sandy soil of Cape Cromathi is covered with violets, which is burnt to a summer, in order to feed the fheep to Europe, where it is employed in soap-manufactories. The fowls also afford a fine wood for building and for planks; the honey is likewise drawn tar and pitch; and the turpentine of Cyprus is more esteemed than that of any other country.

The flocks of Cyprus, that might be more numerous, afford to commerce a tolerably large quantity of wool, which passes into Italy and France. One of the productions which the Cyprians rear with the greatest attention, and which has been a beneficial branch of trade, is the famous wine which is yielded them by vines with twining and creeping stems, and large delicious fruit. The beet vines, which supply the yellowish fruits, and perfumed wine that is so much valued, occupy a district called the “Commandery,” because it made a part of the great commandery of the templars, and of the knights of Malta. It is separated from Mount Olympus and the town of Limassol and Paphos. Among the Greeks of Cyprus, there is a very ancient custom, which is, that when a child is born, they bury large vessels filled with wine, and immediately stop the wine; these are not taken out of the ground but on occasion of the marriage of that child. Part of this which remains unconsumed, is sold to Europeans, and admired for its peculiarly excellent quality. Cyprus wine is conveyed to Europe either in casks, or in those large glass bottles covered with rust or wicker, which are called dames jeanes. When Cyprus wine is shipped in casks, and the price is not considered, in order to have that of the best quality, the purveyor procures casks in which has been left a certain quantity of free, which have the property of improving the wine. Accordingly, the casks, thus provided with free,fetch four times the price of those which are destitute of them. The vines yearly made in this island amount to near 40,000 gallons. The arts, both liberal and mechanical, find little encouragement in Cyprus. With the exception of the preparation of the leather called “Turkey-leather, or Morocco,” there are scarcely any that deserve attention. This leather is prepared at Nicotia, and in the neighbouring villages; the workmen pretend to have a particular process, which they keep secret; however this be, it is certain that the leather which has passed through their hands is more lively and more brilliant in colour, and is, in general, better dressed than in other parts of Turkey. The workmen of Nicotia and its environs know how to apply dyes that are equally brilliant and durable. They also manufacture printed calicoes, the colours of which become brighter by wear and bleaching. Other cloths, half silk and half cotton, are likewise manufactured in the same places; but they fetch a high price, and are of little importance as articles of trade. In return for these productions of nature and art, the Cyprians receive wooden cloths, fatins, light stuffs, laces, some metals, Indian spices, and commodities from European colonies, &c. &c. These articles of the import trade are not numerous as they would be, if the word of governments had not singularly diminished the population and resources of the more fruitful countries of the East. Cyprus was formerly stocked with deer, robbers, alligators, wild boars, and a great number of very beautiful peacocks; but they are now all destroyed. No wild animals are seen here but foxes and hares; the odorous herbs on which the latter feed give their flesh an agreeable flavour. The most common of the winged tribe are rails, partridges, sparrow, quails, and thrushes. Of water fowl there is great plenty. The beeches and ortolans are remarkably fat, and so numerous that they may be procured at the rate of a penny for a dozen. The oves are lean and small; the butter is tender and juicy; Cyprus has serpents, harmless and noxious, and also a kind of fowler called tarantulas.

The climate of Cyprus has been reckoned insalubrious on account of its heat and long continued drought and frequency of rain. The heat, partly owing to the vicinity of Syria, is in summer excessive; but it is different in different parts of the island, which, being intersected from east to west by a chain of mountains affords two different regions as well as temperatures. To the north, the winds that blow from the high mountains of Carataonia, checked and repelled by those with which the island is crossed in its length, temper the heat of the summer, produce piercing colds during the winter, and preserve frozen snow on the most lofty spots, through the greater part of the year. This northern region is also, generally speaking, the most hilly, the most wooded, the most rural, and the least fertile. In the plains of the south, on the contrary, the heat of the sun, reflected by the shelves of rocks, which, in a great measure, form on this side the back of the mountains, there acts at full liberty. The north winds not being able to clear the natural barrier which the middle of the island opposes to them, do not cool the atmosphere; and without the light sea breeze which occasionally springs up and moderates the heat, it would be insupportable in certain days of the summer. Rain here is also very rare in this season, and long droughts sometimes burden an agreeable verdure, destroy the plants, attract close and innumerable numbers of gnats, and with the avidity thus occasioned, introduce a distressing fear. The irrigation of the lands is neglected by the oppressed and spiritless inhabitants, while, in some districts, flagrant water render them an unhealthy abode. Running streams are scarce, and river streams that flow are mere torrents, formed by the winter rains, and the melting of the snow on the mountains, and whose beds are dry during warm weather. The abbe Mariti, who seems unwilling to acknowledge the infallibility of Cyprus, allows that the inhabitants are very subject to intermittent fevers; but these, he observes, are easily avoided by care and temperance. In order to cure them, the Greeks take a draught of their old red wine when they feel the excess of the cold; and many of the Cypriots live to a very advanced age.

The Greeks, who inhabit this island, are tall and well made; their countenances and their manners are equally noble and agreeable. But their moral character is not thought to correspond with these external good qualities. They are said to be the most cunning and knavish of all the Greeks; qualities which some have ascribed to the oppressed and slave state to which they are reduced; and even these obliquities of disposition and character are said to be counterbalanced by the hospitality, for which they are distinguished. The Cypriot is gay, says Sonnini, and a great friend to show and pleasure; but he is not the only slave whom we have seen dancing in his feters. The women have fine eyes, but, in other respects, as Mariti informs us, are far from being beautiful — they do not, however, degenerate from their anc wors, as notaries of that goddess, whose favourite habitation this isle was supposed to have been. In their attire they are choice; being excessively fond of flowers, as the most natural and elegant accompaniment of their other attractions; they do not dissemble their wish to please, but they manifest it with an amiable frankness. Although enjoying, perhaps, little liberty than they formerly possessed, the restrictions to which custom, or the caprice of the men subjected them, does not amount to constraint; and at least they no longer compose the disgraceful tribute
tribute which their ancestors paid to the queens of Peræa, of 50 among them, whose duty, in a haughty and despotic court, consisted in throwing themselves between the wheels of the cars, and presenting their backs to the queen, who made use of them as a footstool.

Like most places in the Levant, Cyprus is ruining by the oppressive despotism of the Turks, which counteracts the bounty of nature, and the productions of the soil, and which extends its benumbing influence over fields, arts, and men; so that the curious traveler every day finds commerce fade, industry decay, lands dry up, and agriculture restrained and impoverished. Valleys, once fertile and productive, are either marked by traces of desertity, or, for want of culture, overrun with brambles and other weeds or noxious plants. Population declines, and men quit a defoliated country, and seek other abodes. This island was formerly governed by a king; but the poor inhabitants, weary of his extortions, which, as they delusively imagined, were increasing in order to maintain the splendor of his state, petitioned the Ottoman court to send them a sultan, or governor of inferior rank—their request was granted; but they found that the change of title made no alteration in the capacity of their plunderer. The revenues are enjoyed by the grand vizier, but he forwards them to the governor, who, of course, is always the highest bidder. When the island was first taken by the Turks, it contained, beside women and children, above 70,000 men, subject to annual capitation, which produced a revenue of 400,000 piastres; the sum now exacted is much greater, though the number of contributors is scarcely a sixth part of what it then was. When a new tax is to be raised, the governor does not immediately call on the people, but sends his order by his interpreter to the archbishop, who communicates it to the bishops, and they must obtain the sum demanded from the inhabitants of their several dioceses. These taxes are often of the most absurd kind; sometimes they are laid on Christian names. The poor people are treated with the most unsufferable iniquity by the governors, who do not even condescend to give their exactations a decent appearance of equity. This violence in the year 1764, occasioned an insurrection, in which the governor met with the death which he deferred from the fury of the injured people. The consequence of this was a civil war which lasted two years; but the people, being at length obliged to submit to those whom the Sultan sent to succeed the deceased, their attempt to shackle the yoke only served to exasperate their tyrants, and to render their own servitude more severe. In this island there are several rebellious confederates; amongst these we find, from Martyr's account, that the British confederates are involved with authority to banish any of his countrymen who shall embrace the Mahometan religion. Somnus's Travels in Greece. Abbe Martyr's Travels in the Island of Cyprus, &c.

Cyprus is of the order of knights, called also knights of Silence, and knights of the Sword; instituted by Guy de Lulignan, king of Jerusalem and Cyprus, in 1192.

The emblem of this order was a collar interwoven in manner of true hawks' knots, garnished with precious stones, and intermixed with the letters S and R; pendant to which was a medal of gold enamelled, with a sword, the blade crowned with the letter S; round the medal was this motto, "Securitas Regni," expelling the design of the inquisition, which was to oppose the murmurs and irritations of the infidels in that island.

Cyprus Bird, in Ornithology, a common name for the stiphsa, or black-cap, a very small bird, well known in England, and much more plentiful in the island of Cyprus, where it is esteemed a very delicate bird at table. See Motacilla.

Cypris Viroli. See Cypris and Vitriol.

Cyprus Wood, in the Materia Medica, a name given by some authors to the rose wood, because much of it is brought from the island of Cyprus.

Cypræa, or Cypræella, in Ancient Geography, a town of Thrace, in the province of Rhodope, according to Thucyd. Appian, Livy, Mela, and Steph. Byz.; the last of whom places it near the river Hebrus. In the Itinerary of Antonine, it is marked between Tropæopolis and Symeisæla. It had been episcopal. Bellonius describes alabasters, at a place called Cypræa or Chypfilaris; he says, that the alum in commerce was called "alumem Leptium, or di melum." "In some maps," says Beckmann (Hist. Inv. v. i.), "I find the names Tysfola and Chypfilaris on the western side of the river Mariza, Mima, or Marisch, which was the Hebrus of the ancients; in others stands the name Scapola or Scapæa Hyle, where, according to the account of Theophrastus, Phiny, and others, there were considerable ruins."

Cypræa, a place of the Peloponnesus, in Arcadia. Thucyd. Steph. Byz.—Allo, a town of Spain, near the Mediterranean sea, and a mountain named Celebraticum jugum.

Cyptasia, a town of Asia Minor, in Galatia. Protol.

Cyra, an island of the Peræan gulf. Steph. Byz.—Allo, a mountain of Africa, in the Cyrenaic territory.

Cypractica, a name given by Strabo to an island of the Adriatic gulf, called by Ptolemy, Phiny, and others, Carica.

Cyranæ de Bergejac, Savinien, in Biography, a French author, born at Bergejac, in Perigord, in 1625. He was initiated in the art of war, and displayed a daring temper, in the number of duels which he fought. He obtained, by his general conduct, the name of "The Intrepid." At the sieges of Moufflon and Arras he was wounded, which, together with his passion for literature, induced him to quit the army, for the study of philosophy and the belles lettres. Gaffendi, Chapelle, and Moliere, were his instructors; and he became an author, distinguished, however, rather for the peculiarity of his works, than for those qualities which give a man distinction. He published a tragedy and a comedy, which were well received; but he is known chiefly for his "Comic History of the States and Empires of the Moon!" a burlesque piece, in which philosophy is blended with satire. In a similar style he wrote "A Comic History of the States and Empires of the Sun." He left behind him, likewise, "Letters," "Difcorcurs," and a small piece on "Physics." In his youth his conduct was licentious, and his opinions seemed to accord with his manners. An accident led him to reflection, and to a reformation of his life; but his consequences were the cause of his death, which happened in the year 1655. Moret.

Cyrausensis, in Ancient Geography, an episcopal seat of Asia Minor, in Lydia; mentioned in the Council of Chalcéon.

Cyraunus, a name by which Herodotus (iv. c. 155) mentions an island situated on the coast of Libya, near the country of the Gyzantes; it was very narrow, and 200 fathoms in length, and covered with olives and vines; it had also a lake, concerning which some fabulous stories are related.

Cyrba,
CYR

CYRBA, a town of Asia, in Pamphylia. An episcopal see of this name is mentioned in the Acts of the Council of Nice.

CYRASIA, a place among the Greeks, a kind of cap with high top, in form of a cone, which were worn by the priests.

CYRE, or Ani at Cyrena, a fountain consecrated to Apollo, in Africa, on the spot where the town of Cyrene was built, to which it gave its name.

CYRENAICA, a country of Africa, bounded on the east by Mauritania, on the west by the Regio Syrta, on the north by the Mediterranean, and on the south by the Sahara. The ancient geographers are divided in opinion as to the extent of the country. Strabo says, that it extended from the promontory of Cherchonis Magus to the gulf of the greater Syrta; but Pliny makes its extent more considerable, bounding it by mount Catalognum, and on the west by the Smaller Syrta, and making it 300 miles broad. Strabo also affirms it to have extended so far as Egypt, and maintains that Mauritania lay between these two regions. This country has also been called Pan-epigraph from its having included the five cities, Cyrene, Berenice, Teuchira, Berenice, and Apollonia; however, this was only a part of Cyrenaica. Its metropolis was Cyrene, which was, Berenice, Teuchira, Berenice, Apollonia, and Adriane or Hadrinopolis, lay along the coast of the Mediterranean; and their inhabitants carried on a considerable trade.

Although a great part of Cyrenaica and the Regio Syrta was a perfect desert, yet in both countries there were some fruitful plains. The inhabitants were subject to fevers, which have been ascribed to the insalubrity of the air. The Lathon, placed by some in Mauritania, was the only considerable river of Cyrenaica. The Monte Vafi and Ansambri are the only mountains of note; and the Pulus Pashuri is the only fountain or lake. Some parts of the Cyrenaica and Regio Syrta were famous for the production of the lophium, a plant or shrub much celebrated by the ancients. Great quantities of this vegetable were imported into Greece, and many other countries. The ancients had various modes of preparing it, both for food and for physic. As we learn from Athenaeus and Hippocrates, Cyrenaica also abounded with a rich oil, as we are informed by Theophrastus. Athenians relate, that the roes, violets, and all other flowers growing in this country, except fennon, were famous for the fragrant colours they emitted; and that, in the time of Berenice, a most valuable ointment was made of the Cyrenaean violes.

The principal nations inhabiting this tract, or contiguous to it, were the Barci, so called from Barca or Barca, their capital, the Phylis, and the Nafamoines. The first occupiers of this country, as we learn from Herodotus, consisted of a colony brought by Battus, the Thercean, from his own country, the isle of Thera, to Platea, an island on the coast of Libya. Hence they removed to that part of the continent that was opposite to this island, and took possession of the delightful province, watered by two rivers, and called Azyrhus. By the Libyans, they were conducted to Inis, a charming country to the west of Azyrhus, and here it is said, by Eurichus, they built Cyrene, about the third year of the 17th Olympiad, 630 years B.C. Aristotle says, that in his time Cyrene was a republic; and we learn from Diodorus, that the people were free, when the contention took place between them and the Carthaginians about their respective limits, and that they were governed by their own laws, till the Macedonians subdued Egypt, we find afflicted by Strabo. After several conflicts with invaders, Cyrenaica was ceded to Ptolemy, and it remained subject to the kings of Egypt, till Ptolemy Philometor transferred it to his natural son, named Apion, who, in the year of Rome 677, the 57th year B.C., left it by will to the Romans. The senate, instead of accepting it, permitted all the cities to be governed by their own laws; a permission which filled the country with a number of petty tyrants, who contended for power, and threw the country into confusion; but Lucullus, in a great measure restored the public tranquility, on his arrival, during the first Mithridatic war, 89 years B.C. The destruction of these when had been kindled here by the first Ptolemy, and land to have greatly contributed to these disorders. The troubles of the country, however, did not terminate till it was reduced to the form of a Roman province, about 25 years after the death of Apion, and 77 B.C. Strabo says, that in his time Crete and Cyrenaica formed one Roman province. Upon a revolt, Cyrene was destroyed by the Romans; but they afterwards rebuilt it. In process of time it fell to the Arabs, and afterwards to the Turks, who are the present possessors of it.

CYRENAICUS, a lexic of ancient philosophers; so called from the native city of their chief, Aristippus of Cyrene, a disciple of Socrates. See Aristippus.

The distinguishing tenets of the Cyrenaic system, as far as they can be collected from the casual, and perhaps unfounded, representations of prejudiced contemporaries, and from the adulterated and vague reports of later writers, are as follow. "Perceptions alone are certain; of the external objects which produce them we know nothing. No one can be assured, that the perception excited in his mind by any external object is similar to that which is excited by the same object in the mind of another person. Human nature is subject to contrary sensations, and pain and pleasure; the one a harsh, the other a gentle emotion. The emotions of pleasure, though they may differ in degree, or in the object which excites them, are the same in all animals, and universally create desire. Trofe of pain are, in like manner, essentially the same, and universally create aversion. Happiness consists in tranquility or indolence, but in a pleasing agitation of the mind, or active enjoyment. Pleasure is the ultimate object of human pursuit; it is only in subjection to that same friend, friendship, and even virtue, are to be desired. All crimes are useful, because never committed but through the immediate impulse of passion. Nothing is just or unjust by nature, but by custom and law. The Bruce of philosophy is to regulate the f靛s, in that manner which will render them most productive of pleasure. Since pleasure is to be derived, not from the past or the future, but the present, a wise man will take care to enjoy the present time, and will be indifferent to life or death." Such a system, we may naturally suppose, would engage temporary admirers and votaries; but we may no less reasonably conclude, that, whilst it provided merely for the gratification of the fibilities and passions, and left human nature destitute of its noblest ornaments and highest pleasures, it would soon fall into contempt which it deserved.

Cicero makes frequent mention of Aristippus's school; and speaks of it as yielding the debauchies.

Three disciples of Aristippus, after his death, divided the estate, the doctrine of which was for some time taught by his daughter Arete, into three branches; under which division it languished and fared; the first called the Heraclean school; the second the Athenarian, and the third the Theodorean; from the names of their authors.
C Y R

Hereafter, gloomy in his temper, and deriving from his principles no sufficient sources of happiness, became to thoroughly dissatisfied with life, that he thought it the only concern of man to avoid misery; and wrote a book to prove, that death, as the cure of all evil, is the greatest good; hence he obtained the appellation of ",sodanarian, the advocate for death. Ambrose recurred from the doctrine of his master so far as to a knowledge, the merit of idol piety, friendship, and patriotism, and to allow that a wise man might retain the possession of himself in the midst of external troubles; but be inured to such of his frivolous tasks, as to value his own upon the most trivial accomplishments, particularly upon his dexterity in being able to drive a chariot twice round a course in the same ring. Theodorus was a disciple of Ancsar, and, for the freedom with which he spake concerning the gods, was banished with the name of atheist, and banished from Cyrene. At Athens, where he took refuge, his society would have terminated fatally to him, if Demetrius Philander had not interposed in his favour, and introduced him to the court of Ptolemy Lagus. After a long interval he returned to Athens, and is said to have had a pupil named Dio Cassius, who, he is supposed, preserved his discourses concerning his philosophy. On the subject of the Grecian superstitions. Sextus Empiricus (Adv. Math. i. ix. c. 57.) joins him to those who maintained, that the reputed gods were men, who had trafficked great power on earth; and Clemens Alexandrinus (Protrept. p. 24.) expresses his surprise, that Eumenes, Nicias, Diogoras, Theodorus, and others, who had lived virtuously, should be pronounced atheists for their opposition to Gnostic polytheism. Lact. hb. ii. Brucker's Hist. Philos. by Ernst. vol. i.

CYRENE, now called Curiad, or Corne, in Ancient Geography, a town of Africa, and capital of the country called Cyrenaica. It derived its name from the fountain Cyre, near which it stood; at the distance of 11 miles from the sea, according to Pery, 24 from Apollonia, which was its port. It was large and populous, and abounded with all the elegancies as well as necessities of life. Its territory produced a great number of excellent horses; a circumstance which probably induced the Cyrenaeans, whether Libyans or Greeks, to apply themselves to the study and practice of everything that was related to those animals. The inhabitants of Cyre worshipped their king, Balbinus; the founder of their kingdom. Hircd. l. iv. c. 161. See CYRENE.

CYRENSCHATA, a name given by Ptolemy to two towns of Cyropolis, in Media, and in Sogdiana.

CYRELLE, a town of Macedonia, in Paphlæba; so called by Livy, and named Chyrellae by Ptolemy.

CYRIA, an episcopal town of Asia, in Syria.

C Y R I L, bishop of Jerusalem, was born about the year 315; ordained presbyter in 324 or 325, and bishop in 350 or 351, and died in 386. While Cyril was bishop of Jerusalem, the emperor Julian is said to have proposed to the Jews the rebuilding of their temple, and as some writers have asserted, made preparations for this purpose; but the bishop, as we learn from Rufinus (i. b. c. 35), considering the prophecies of Daniel, and the words of our Lord recorded in the gospels, confidently asserted, that it could not be, that the Jews should be able to lay there, one stone upon another.

His works, now extant, are his "Epistle to the emperor Conflantinus," mentioned by Sozomen, with "18 Catechetical Difcoursens," in which he treats of the principal subjects of the christian faith, compiled in 347 or 348, and his "Mythologice Catecheses," in which he discourses concerning the two sacraments of the church. Cave's H. L. vol. i. Lardner's works, vol. iv.

C Y R I L, bishop of Alexandria, was a native of this city, and succeeded Theophrastus as bishop of it in the year 412. The authority which had been usurped by this see, was cultivated and confirmed by Cyril; for as soon as he obtained the episcopate, he banished the Novatians, shut up their churches, and took away all their sacred vessels and ornaments, and deprived their bishop Theophrastos of his whole property. Soon after, when the Jews committed some outrages in the city, the bishop put himself at the head of the people, assailed them in their synagogues, drove them out of the city, and permitted the christians to plunder their elutes. This conduct of Cyril displeased Oracles the governor, whose authority was thus invaded, and occasioned frequent skirmishes in the city. Cyril was also charged with having been accessory to a sedition, in which Hypata, a famous heathen philosopher, respected and consulted by Oracles, was cruelly murdered; but this charge has been refuted by the advocates of the bishop. However, Cyril owed his chief fame to his dispute with Nollius, against whom he maintained, that the virgin Mary was to be the mother of God. This dispute, trivial and unintelligible in its origin, terminated in a few contes, and a general council was summed at Ephesus in order to decide it. Cyril distinguished himself by a defence of the christian religion against the emperor Julian, contending against the Julianists. He died in the year 444. His works are very numerous; they have been collected together and printed in Greek and Latin at Paris, in 6 large volumes fol. They consist of the commentaries upon the Pentateuch, called "Glyphory, &c." Hahn, the 12 bishop prophets, and St. John's gospel; 17 books on the adoration and worship of God in spirit and truth, composed in form of a dialogue; dialogues on the holy and confessional trinity, and on the incarnation; a discourse of the orthodox faith, homilies, letters, and apologies. Cave's H. L. vol. i. Dupin's E. H. vol. iv. Lardner's works, vol. iii. iv. viii.


Gen. Ch. Cal. Periathan superior, of five narrow leaves, permanent. Cor. monopetalous, funnel-shaped; tube cylindrical, curved, lightly compressed; limb spreading, five-cleft, rounded, the three lower lobes largest. Stam. Filaments four, inserted into the tube, and included in it; the two lowermost longed, at length spiral; the others with a barren filament between them; anthers ovate, two-stel, at length connivent, white. P. 5 white, German inferior, two-lobed, downy; style thread-shaped, shorter than the tube; stigma two-lobed. Peric. Capsule imperfectly two-celled. Seeds numerous, minute.


Only one species is known, C. paleborda, Curt. Mag. t. 374. (Achimenes Brown. Jam. t. 30. f. 1.) a native of most hillly places in Jamaica. It is herbaceous and perennial. Roots granulated and flaky. Flowers of a most vivid scarlet, extremely beautiful. Leaves ovate, serrated; flamed
Cyr

friamed with purple beneath, as well as pale and polished, like the bulbs of *Paeonia ensata*. It requires great rove heat, and flowers late in autumn.

Cyrus, in *Ancient Geography*, town of Macedonia, in Emathia, inhabited by a people called Cyrrhetic. Ptolemy.

Cyrmiare, a people of Thrace, mentioned by Herodotus.

Cyrnada, a gulf of Asia, placed by Pliny in Sicily.

Cyrus, an island of Greece, placed by Pliny in the vicinity of Erithe.

Cyrocephalus, in *Botany*, the name given by some authors to the *antirrhium*, the calves-mouth, or snap-dragon.

Cypopolis, in *Ancient Geography*, a town of Asia in that part of Media, called Atropatene; between the Cyrus and the Amardus; ascribed by Ptolemy to the Cadirians.—Also a town of India, mentioned by Herodotus.

Cyrus, a town of Asia in Sagdiana. Arrian says that it was built by Cyrus on the banks of the Jaxartes, and that it was taken by Alexander. He adds, that it was very large, and that its walls were very high; but that it was utterly destroyed to its very foundations. It is called *Cyra* by Strabo, and *Cyrephonata* by Ptolemy.

Cyrhia, a part belonging to Criissa, a town of the Locrians, near a gulf of the same name.

Cyrhada, a people of Asia in Sagdiana, who inhabited the banks of the Oxus. Ptolemy.

Cyrhileus, a people of Ethiopia, placed by Claudian on the banks of the Nile.

Cyrrehistica, a small country of Asia, being one of the divisions of Syria; which lay between Seleucia, Commagene, and the Euphrates. It was so called from its metropolis *Cyrrhus*; and had 20 towns according to Ptolemy.

Cyrhus, or Cyrus, a town of Asia in Syria, and capital of Cyrrheticca. Propocius says, that it was founded by the Jews, and called by its own name Cyrus, in honour of Cyrus their deliverer from the captivity in Assyria. It was re-cultivated and adorned by Justinian.—Also, a town of Greece, in Macedonia, near Pella-Phryxides.

Cypta, a river of Gallia Narbonennis, in the territory of the Maflilans.

Cyrtaea or Cyrtis, a town situated on the banks of the Red Sea.


Gen. Ch. Col. none. Cor. monopetals, club-shaped, curved; its border in five small lobes, ovate-oblong, segments, of which the three outermost are rather the largest, and each tipped with a point. Stam. Filaments fix, inserted into the tube, shorter than the corolla; anthers oblong, erect. *Pyt.* Germen inferior, ovate, obtusely triangular; stye thread-shaped, as long as the corolla; *Rgma* three-clft. Peric. Capsule of three cells. *Seeds* numerous.

Eff. Ch. Corolla tubular, club-shaped, curved, its limb in five ovate-oblong segments. Stamens inserted into the tube, approximated at the top.

C. angulifolium, Curt. Mag. t. 271. (Crinum angulifolium, Linn. Sylv. 195) and C. obliquus, Att. H. Kew. v. 1, 414. Andr. Repot. t. 178. (Crinum obliquum, Linn. Sylv. 195, Amaryllis Umbrella, L'herit. Sert. t. 16). are beautiful bulbous-rooted plants found at the Cape of Good Hope. The former has drooping slender scarlet blossoms; the latter large pendulous ones, variegated with orange and green. Both are cultivated, either in the greenhouse or stove. Like other Cape bulbs, and flower in the summer.

Cyranthus, in *Gardening*, comprises plants of the bulbous rooted perennial kind; of which the species mostly cultivated are, the narrow-leaved cyranthus, (C. angulifolium) and the oblique-leaved cyranthus.

Method of Culture.—There are a sort of plants which are capable of being multiplied either by off-setts from the roots, or by seeds; but the former is much the best method.

In the off-set method, they should be separated from the roots at the time the stems begin to decay, and be planted out in separate pots, being then put under the protection of a greenhouse or garden frame.

In the seed method, they should be sown in pots in the spring season, being immediately plunged in a moderate hot bed. And when the plants appear, and have attained sufficient growth, they should be removed into separate pots.

The plants afterwards require similar management in the different methods of raising them to other bulbous rooted kinds from the same place.

They afford a pleasing variety in greenhouse collections.

Cyrta, a people of Asia, in Media, mentioned by Strabo and Livy.

Cyrtona, a bunch or curvity of the back. See Gyraceous.

Cyrton, in *Ancient Geography*, a town of Greece, in Bocotia, built on a mountain, according to Pananius, who says that it had a temple of Apollo, and a wood consecrated to that deity, and also a statue to Diana.

Cyrus, a town situated in the interior of Egypt.

Cyrus, in *Biography*, the famous founder of the Persian monarchy, and the reformer of the Jews to their country, their temple, and their former state, was the son of Cambyses, and was born about 600 years before the Christian era. It is agreed by all writers, that the mother of Cyrus was Mandana, the daughter of Alyages, the Median king; but historians are not unanimous as to the quality and description of his father. Herodotus considers him only as a private person of high rank; but Xenophon makes him sovereign of Persia, subject however to the Medes. Dr. Prideaux, who has examined with much attention the two accounts of Herodotus and Xenophon, and who is well qualified to appreciate their different merits, follows decided the facts related by the latter, because he not only wrote at all times, and on all subjects with much consideration, and a clear judgment, but having lived at the court of the younger Cyrus, was well qualified for the task which he undertook. Rolin also concurs with Xenophon in his history of this illustrious prince. Cyrus, beautiful in his person, and more amiable for the qualities of his mind, lived with his father during the first twelve years of his life, and was educated after the Persian manner in hardship and toil, and all such laborious exercises, as would tend to fit him for the fatigues of war in which he unquestionably excelled all his contemporaries. At this early period he surmounted all of his age, not only in aptness to learn, but in the courage and address with which he executed whatever he undertook. After this he was sent to Media to the court of Alyages, his grandfather, with whom he lived about five years. Here his conduct was so excellent and amiable, notwithstanding the pride, luxury, and magnificence which prevailed in the court of Media, that he was generally
Cyrus.

ly beloved, and laid the foundation of that attachment to his person which enabled him afterwards to perform the exploits which are recorded of him. He was gentle, affable, beneficent and generous. Wherever the young lords had any favour to ask of the king, Cyrus was their facilitor. If the king had any subject of complaint against them, Cyrus was their mediator; and he always managed their affairs so well, that he never failed of obtaining what he desired. When he was sixteen years of age, he accompanied Alyages in an attack upon the Assyrians, who had made inroads upon the Persian territories; his behaviour on this occasion was such, that the victory obtained was imputed to his energy and superior prowess. Soon after this he returned to his father, with whom he resided till he had attained the age of forty, when he was called forth to the assistance of his uncle Cyaxares, by whom he was appointed generalissimo of the Medes and Persians. This led to the establishment of that vast empire, of which he was the founder, and which he erected upon principles of so much wisdom, that it existed, in spite of the weakenss, and the wickedness of his successors, for a period of 200 years. In this sketch we shall not attempt to follow the hero in all his contests; we have already viewed him in his conduct with regard to Cyrus, and in every instance, where valour and wisdom were required, he was found poffeied of all those qualities that can render a man and a prince truly great. After a signal victory obtained by Cyrus over the Assyrians, aided by Cyrus, a young prince of exquisitely beauty was found among the prisoners of war; and in the division of the spoil, she was reserved for Cyrus. Her name was Panthea, the wife of Abradates, king of Sefiana. Upon the report made to Cyrus of her extraordinary beauty, he refused to see her, fearing (as he said) that such an object might engage his affections more than he desired, and divert him from the prosecution of the real design which he had in view.

When he had dethroned the Lydian king, he completed the reduction of all Lesser Asia, and Syria, and then turning his arms against the king of Asiyra, he invested Babylon, which he took after a siege of two years, and thus put an end to that great and powerful monarchy, B. C. 538. See Babylon.

The destruction of Babylon forms a very interesting event both in profane and sacred history; and, more particularly, in its reference to the predictions of Scripture and the subsequent fate of the Jews. To the particulars that have been recited under the article Babylon, we shall here subjoin some other facts that serve to ascertain the precise accomplishment of the prophecies, pertaining to this event, both as to the causes that produced it, and the consequences that resulted from it. Ifaiah, who began to deliver his predictions in the year 757 B.C., and who was put to death about the year 696 B. C., and Jeremiah, who died about the year 577 B. C. expressly foretold the destruction of this city, together with several circumstances that attended it, and that marked it as a very important era in the history of the world. Both these prophets speak with such assurance of its destruction, and of the manner in which it would be brought about, that they seem to describe a future event as if it had already occurred, and they had been witnesses of the catastrophe. "Babylon," says Ifaiah (xxi. 9), "is fallen; and all the graven images of her gods he hath broken unto the ground." "Babylon," says Jeremiah (li. 3) "is suddenly fallen and destroyed, howl for her, take balm for her pain, if so the may be healed. (See If. xiii. 6, 9, 15, 18, 19, 22; xiv. 23, 24; Jer. i. 18, 29, &c.) Cyrus, who was the declared conqueror of Babylon, and who transferred the empire from the Babylonians to the Medes and Persians, was foretold by name above an hundred years before he was born; and that he would not be surprized at the prodigious rapidity of his conquests, God condescended to declare, that he himself would be his guide, and that in all his expeditions he would lead him by the hand, and would subdue all the princes of the earth before him. It was promised that he should be a great conqueror, subduing nations before him, &c.; and accordingly he subdued kings and took several cities, extending his conquests over the whole of Asia, from the river Indus to the Aegean sea. It was also promised that he should find rich spoil among the conquered nations; and according to Pliny's account (H. N. i. xxxiii. c. 15) the treasure he found in his conquests amounted to a prodigious value; nor is this surprising when we consider that those parts of Asia at that time abounded in wealth and luxury; that Babylon had been heaping up treasures for many years; and that the riches of Cyrus, king of Lydia, conquered and taken prisoner by Cyrus, were in a manner proverbial. "Thus faith the Lord to his anointed, to Cyrus," says &c. II. xlv. 1-4. The time of the reduction of Babylon was specifically marked out by the prophet Jeremiah (xxvi. 11, 12). "These nations," says he, referring to the Jews and neighbouring nations, "shall serve the king of Babylon 70 years; and it shall come to pass, when 70 years are accomplished, that I will punish the king of Babylon, and that nation, faith the Lord." This prophecy was delivered, as appears from the 11th verse of the chapter, "in the 4th year of Jehoakim, the son of Jofiah king of Judah; that was the first year of Nebuchadnezzar king of Babylon," and from that time 70 years elapsed to the taking of Babylon and the restoration of the Jews. Several circumstances relating to the siege and taking of Babylon are likewise depicted by the prophets. It was foretold that God would stir up the Medes and Persians against it (II. xxi. 2. Jer. i. 11); and accordingly it was besieged by the united forces of the Medes and Persians under the command of Cyrus the Persian, the nephew and son-in-law of the king of the Medes. It was foretold that various nations would unite against Babylon (II. xiii. 4. Jer. li. 27); and accordingly Cyrus's army consisted of various nations. Moreover it was predicted that the Babylonians should be terrified, and hide themselves within their walls (Jer. li. 50), which was actually the case, both at his first and second summations. It was also foretold, that the river should be dried up before the city should be taken, an event very unlikely to happen, because it was more than 2 furlongs broad, and deeper than the height of 2 men, standing upon one another. (II. xlv. 27. Jer. i. 38, li. 56) and it is well known that Cyrus turned the course of the river Euphrates, which ran through the midst of the city, as we have already stated under the article Babylon. It was foretold, that this city should be taken by surprize during a Feast, (Jer. i. 24. li. 59. 57) and accordingly the city was taken in the night of a great annual festival. It was predicted that the king would be intestantly feated with horror and perturbation of mind (II. xxi. 34.) and this, we know, was the state of Balthazar or Belhazzar, when the event occurred. (Dan. v. 6) The prophecies above cited were delivered by Ifaiah and Jeremiah, and the facts are related by no less historians than Herodotus and Xenophon; and Ifaiah lived above 250 years before Herodotus, and near 350 before Xenophon; and Jerusalem stood above 150 years before the one, and near 27 before the other. As Cyrus took Babylon in the year 538 B.C. Ifaiah delivered his prophecies at least 150 years before the taking of Babylon; and Jeremiah foretold his prophecies concerning Babylon to Babylon by the hands of Seraiah, 5 C. C.
CYRUS.

"in the 4th year of the reign of Zedekiah," (Jer. ii. 59.) which was 56 years before the taking of Babylon, for the 4th year of Zedekiah coincides with the year 594 B.C. That the destruction of Babylon was complete and final is no less expressly foretold and minutely described than other circumstances attending this event. For the prophecies see II. xiii. 19, &c. xiv. 22, 23, Jer. i. 13, 23, 39, 40, li. 13, 26, 29, 57, 43, 43; and for the manner in which they were accomplished, see the article BABYLON.

After Cyrus had settled his affairs at Babylon, he went into Persia to make a visit to his parents who were still living, and on his way thither through Media, he there married the daughter of Cyrus, his father, as is recorded in Scripture. Daniel the Mede, having been with her as a keeper of the kingdom of Media in reverend, and then with his wife went to Babylon. He now (viz. in the year 536 B.C.) issued an edict, which has given celebrity to his name, permitting such of the Jews as were remaining from the Babylonian captivity, to return to Jerusalem and rebuild their temple. This decree was certainly obtained by the intercession of the prophet Daniel, who was already highly famed for his wisdom and integrity, in a licentious and truly infamous court. In Daniel, Cyrus seems to have placed the highest degree of confidence; which the prophet turned to the advantage of his oppressed countrymen. From concurring testimony, he no doubt pointed out to the prince the prophecies of Isaiah, in which himself was pointed out by the finger of heaven, as destined for the most important purposes; as delegated to be a great conqueror, and the remodeler of the Jews to their native land.

The learned Prideaux offers many reasons that might have concurred to induce the conqueror to comply with the urgent solicitations of the prophet, his friend, and principal minister. Nor does this form of the edict, mentioned in the first book of Evidras, appear to us liable to the objection framed against it by an excellent biographer. Though Cyrus was born and brought up as an idolater, the interposition of providence must occasionally have made an impression on his mind, which Daniel seems to have converted to the best ends.

He speaks in his decree in the name of the lord of Israel; he was too wise to believe in the gods which his countrymen and the world in general were accustomed to worship, and was probably too much enlightened to refer the passing events of life, and the revolutions of empires, to what the ignorant would denominate chance. He had heard of the hand-writing on the wall, which none but Daniel could explain, and he only, according to his own profession, by the interposition of his God. He had been informed of the deliverance of the fame excellent man from the lion’s jaws, and he might be almost, if not altogether, persuaded, that the God of Israel was the God that had made him "king of the whole world."

Cyrus not only permitted and encouraged the Jews to return to their own country, but readily restored all the sacred vessels and furniture which Nebuchadnezzar had brought from Jerusalem, and deposited in the temple of Baal. Having established his empire, which was bounded on the east by the river Indus, on the north by the Caph- pian and Euxine seas, on the west by the Zagean sea, and on the south by Ethiopia and the sea of Arabia, upon a foundation not easily shaken; he fixed his residence in the midst of all these countries, spending generally 7 months of the year at Babylon in the winter season, on account of the warmth of that climate, 3 months at Sufa, in the spring of the year, and 2 months at Ecbatana during the heat of the summer. Seven years being spent in a state of tranquillity, as he was equally beloved by his own natural subjects, and by those of the conquered nations, he returned into Persia, which was the seventh time from his accession to the whole monarchy. At this time he was about 70 years of age; 30 of which had elapsed since his having been first made general of the Persian forces, and from the capture of Babylon, and 7 from his beginning to reign alone after the death of Cyrus. His life had been uniformly sober and temperate, and he therefore enjoyed to the last a vigorous state of health. When he perceived that the time of his death was drawing near, he ordered his children and the chief officers of the state to be assembled near him; and, after having thanked the gods for all their favours to him during the course of his life, and implored similar protection and favour on behalf of his children, his country, and his friends, he declared his eldest son, Cambyses, his successor, and left the other, whose name was Tanaoas, several very considerable governments. He gave them both excellent instructions, and represented to them that the main strength and support of the throne were neither the vast extent of countries, nor the number of forces, nor immense riches; but a due respect for the gods, a good understanding between brethren, and the art of acquiring and preserving true and faithful friends. After having given his hand to be killed by all who were present, finding himself at the point of death, he added these last words: "All my children, may year lives be happy; carry my last remembrance to your mother. And for you, my faithful friends, as well absent as present, receive this last farewell, and may you live in peace!" Having closed this address, he covered his face, and died, according to Xenophon, quietly in his bed; but if Herodotus is to be credited it was in battle, occasioned by the invasion of the Scythians. To the former opinion Dr. Prideaux, Rollin, and the writers of the Universal History, are decidedly inclined, and by this account he was at his death seventy years of age. Xenophon says that he was buried at Pafargada, and that his monument was to be seen in the time of Alexander the Great.

Cyrus, says M. Rollin, may be justly considered as the wisest conqueror, and the most accomplished prince whose name occurs in prophane history. He possessed all the qualities requisite to form a great man; wisdom, moderation, courage, magnanimity, and humanity, together with an uncommonly power in managing men's tempers and gaining their affections, a thorough knowledge of all the branches of the military art, as far as that age had carried it, a vast extent of genius and capacity for forming, and an equal readiness and prudence for executing the greatest projects. As real merit was the foundation and support of his greatness, as he affected no selfishness and haughtiness of demeanour, but studied to render himself affable and easy of access; and he was amply compensated by the cordial affection and respect of his people. He was beloved, and had many friends, because his sentiments were kind and liberal, and he was friendly in his disposition and conduct. Cicero observes (lib. i. epift. 2. ad Q. fratem), that during the whole time of Cyrus's government he was never heard to speak one rough or angry word; and this shewed a very singular degree of self-command. It was his invariable perdition, that all his pursuits and labours should tend to the happiness of his people. Whilst he was one day discoursing with his courtiers upon the duties of a king, he observed that a prince ought to consider himself as a shepherd; and that he ought to have the same vigilance, care, and goodness. Many great and good characters have been formed by adversity and affliction; but Cyrus was great and good without this kind of discipline. He himself informs us, that during the whole course of his life, the happiness of it was never interrupted by any unfortunate accident; and that in all his conquests the successes had answered his
his utmost expectations. He adds, however, that in the midst of his uninterrupted prosperity, he still revered in his heart a secret fear, proceeding from the changes and misfortunes that might happen; and this prudent fear was not only a preservative against infirmity, but even a kind of preserve for himself.

As to the nature and motives of his wars and victories, M. Rollin considers Cyrus as having maintained a very different character from those conquerors who are influenced by ambition and avarice, and who are capable of violence and injustice. Although Cyrus was not in every respect just, it is evident that he was well aware of the laws and well knew that there were unequal wars, which being undertaken without just foundation, render the person concerned in exciting and producing them accountable for the blood that is shed. Cyrus’s conquests were the consequences of the victories he obtained over Croesus, king of Lydia, who was master of the greatest part of Lesser Asia, and over the king of Babylon, who was master of all Upper Asia, and many other countries; both which princes were his enemies.

With good occasion, therefore, is Cyrus represented as one of the greatest princes recorded in history; and his reign fully preceded at the model of a perfect government, which it would not be, unless justice had been the basis and foundation of it; “Cyrus a Xenophontes seripus ad justi effigiem imperii.” Cc. l. i. epist. i. ad Q. fratrem. Prideaux’s Connection. Universal Hist. Rollin’s Anc. Hist.

Cyrus, second son of Darius Nothus, king of Persepolis, was born about the year 433 before Christ. He was sent at the age of sixteen to govern the provinces of Asia Minor. In this situation he assumed all the haughtiness of royal birth, and inflicted the punishment of death on some of his own relations, who approached him without due regard to the customs and ceremonies of the time. For this he was called severely to account by his father, who, on the pretext, and on some other occasions, was with difficulty reconciled to him. He engaged in a conspiracy against his elder brother, for which he was condemned to death, but the sentence was commuted into banishment to the provinces; being, however, of a refluent disposition, as well as cruel and ambitious, he raised an immense army, under false pretences, but really with a view of attacking his brother. On the plains of Cunaxa, in the province of Babylon, he came in sight of Artaxerxes at the head of 100,000 men. Cyrus was attended by Clearchus, who advised the prince to remain in the rear; but prudence and fear were not among his qualities; he posted himself in the van; and so great was his success at the outset of the business, that he was saluted king by those around him. Rushing, however, too far into danger, he was slain, at the moment when victory appeared to be deciding the fate of the day. This battle is supposed to have been fought B.C. 400. Universal Hist. Prideaux and Plutarch.

Cyrus, in Ancient Geography, one of the largest rivers in Asia. Strabo says, that it had its source in Armenia, that it ran through this country, Iberia, and Albania, and that after having received the waters of the Araxes, and of several other rivers, it discharged itself by two mouths into the Caspian sea. Ptolemy calls it Cyrusus, and Plutarch Cyrus. The former says that it was only a branch of the Araxes that flowed into this river, and that the other branch ran into the Hyrcanian sea. Strabo, Flutarch, and Appian say that it had two mouths; but Herodotus gives it forty. — Allo, a river of Asia, in Media. Ptolemy places its mouth between the Cambylis and the Amurdus. — Allo, a river of Asia, which ran through the valleys of Persis, near the Pafagardes, according to Strabo; who adds that the king had given it the name of Cyrus instead of its ancient appellation of Agradate. It discharged itself into the Persian gulf. — Allo, an ancient town of Syria, called Cyrrhus; which see. — Allo, a town of Greece, in the island of Euboea.

CYRRUS, a town and port of Asia, opposite to and rightward of the town of Chios, in an island of the same name. This part is known by the victory which the Romans gained here over the fleet of Antichus, in the year of Rome, 561. Livy, l. xxxvi. c. 44.

Cyst, in Surgery, the bag, or membrane, in which an engendered tumor of the testicles, seminomas, or sarcomatous kind, is included. In extirpating these tumors, if, by neglect, or accident, the evil, or any considerable part of it be left behind, the tumor will not fail to return. Indeed, if the tumor be a schilbus, the contents are hard enough to make a clear extirpation of it, notwithstanding its including costs be wounded; but when the matter of the tumor is soft, or fluid, by its escaping the tumor will become focaded; so that it will be hardly possible to make a clear extirpation of the cyst without leaving some fragments of it behind, which will, in that case, be brought away afterwards by suppuratives, digenises, and a proper treatment; and when the sin is, by this means, cleared, the wound may be safely healed, without any danger of the return of the complaint. CYSTICA ARTERIA; is a branch of the hepatic artery, which supplies the gall-bladder. See Artery.

CYSTICAPNOS, in Botany. See Fumaria. CYSTICS, denote medicines against diftemers of the bladder. See Stone, Lithotrity, &c. CYSTICUS DUCTUS, in Anatomy, is the tube of communication between the bladder and the hepatic duct. See Liver. CYSTIRRHAE. See Cystics vesica. CYSTIS FELLEA, a Latin term for the gall-bladder. CYSTIS, in Botany, a name by which many authors have called the akkehi, or winter-herb. It had this name cystis, from the remarkable character of its fruits being contained in a skinny bladder, or bag. It was generally, however, called kaloxechinum. CYSTIS, the same with vesica or bladder. The word is κυστις, which signifies the same. CYSTIS ebolosbus, the same with feliculus, or vesica falls.

CYTA, CUTATIS, in Ancient Geography, a town of Asia, in the kingdom of Colchis (now Mingrelia) situated at the mouth of the river Cyaneus, N. E. of Tyndaris. It is laid to have been the birth-place of the famous Medea, denominated from thence, by the poets, Cytisus.

CYTA, or Cytisus, an ancient town of Scythia. Steph. Byz.

CYTAEUM, Soudag, a town of the Tauric Chersonesus, near the sea, N. E. of the promontory.—Allo, a town situated on the northern coast of the ile of Crete; now called Cerat Sella. It had been episcopal.

CYTAINIS, a country of Asia, in Carmania.

CYTHARA, in Mycia. See Cithara.

CYTHEORUM, in Ancient Geography, a town of Asia, in the Pontus Polemoniacus; the Cotyorum of Pliny, and Cotyora of Xenophon.

CYTHERA, now Cerigo, one of the Greek islands, situated in the Laconic gulf, opposite to Males, or promontory of Laconia, from which it is distant, according to Strabo, 40 furlongs. Stephanus says, that it derived its name Cythera, from a Phoenician, called Cytherus, who settled here. Before his arrival it was called Porphyris, or Porphyria, as some say, because it abounded with porphy-
CYNTHIA, in Ancient Geography, a town of Greece, situated in the interior of Oenotria; supposed to be the present Corinth. 

CYNTHON, a mountain of Greece, in Boeotia, consecrated to Jupiter Cynthi, (Pausan. i. ix. Boeot.) In a defile of this mountain Oedipus is said to have slain his father Laius. 

CYNHERUS, a river of the Peloponnesus, in the Elide, where it watered the town of Heraclea. Paulyasins says that at the source of this river there was a temple consecrated to the goddess called Ionides. This river is called Cynthius by Strabo. 

CYNTHON, in Botany, a name given by the ancient Greeks to the yellow wood, called also thapium and chrysoxylon, a wood used in dyeing cloths, &c. See Cymeia. It was also called Scythium lignum, Scythian wood, from the country whence it was brought; and from this last name it is easy to deduce the name cytisus. The old Greeks often wrote cytisus for cychthon, and the leaving out the initial I, which was a common practice among them, reduces this word to cytisus. Familiar instances of this practice occur to us in the words milax for filmox, maragdus for maragdus, &c. 

CYNTHIUM, in Ancient Geography, a town of the island of Cyprus, in which Cimon died. 

CYNTHUS, one of the Greek islands, distant about 12 miles E. of Cyeos, and called by Strabo to be one of the most fruitful islands of the Aegean sea. It was the birthplace of Cydas, an eminent painter, mentioned by Diodorus, and his commentator Eutathius. The chefe of Cythias was, according to Stephanus and Julius Pollux, in great estimation among the ancients. This island is now called Thermia; which see. On the southern coast there are some remains of an ancient and very magnificent city. 

CYNTHUS was also called Opius and Dryopis. 


CYTINUM, a town of Greece, in the Doride, according to Strabo, which adds, that it was one of the cities which caufed the country in which they were situated to be called Tetrapolis. 


CYTISUS, in Ancient Geography, the name given by Pliny to an island which he places at the entrance of the Red sea. 

CYTISOGENISTA, in Botany. See Genista. 


Cytisus, in Gardening, comprehends plants of the evergreen and deciduous flowering shrubby kinds; of which the species chiefly cultivated are, the laburnum, (C. laburnum) the common cytisus, (C. linifolius) and the hairy evergreen cytisus, (C. biflorus.) 

Method of Culture.—These are plants which are all capable of being increased by seeds, and many of them by cuttings and layers likewise. 

In the first mode the seeds should be sown, either on beds, or, where the plants are to remain, in the spring, as about March, being in this way, when of sufficient growth, transplanted into nursery-rows, to remain till of a proper size.
CYZ

size for being planted out in the situations where they are to grow. When town where they are to remain, they only require to be kept perfectly free from weeds, and trimmed to one good plant in a place, giving the tender forts the protection of mats during the severity of the winter.

The trees of most of the forts afford seeds in abundance in the autumnal season. In the cuttings method, they should be made from the young shoots, ten or twelve inches in length, and planted out in a rather moist, shaded situation, either in the early autumn or spring months, in rows twelve or eighteen inches apart, and eight or ten in the rows. They molly become well rooted in the course of twelve months; and would then be kept perfectly clear of seeds till removed.

The layers may be laid down either in the summer, autumn, or spring seasons; and when the plants are well rooted, they should be taken off, and planted out in nurseries, as described above, for the other methods.

In the management in the nursery they only require to be preserved from the injury of weeds; and to have the land dug well between the rows annually in the autumn, till they are removed; being suffered to take their natural growth in a great measure while there.

Moil of the forts are hardy, and succeed well in almost any soil or situation. The third fort should have a dry soil, and sheltered situation, as it is liable to be injured by frost. It may also be planted in pots, and placed in the greenhouse, during the winter season, where necessary.

They are all plants which are very ornamental for the borders, clumps, and other parts of ornamented grounds; affording much variety by their numerous beautiful bunches of flowers. The large forts should be placed back to the back parts, and those of less growth towards the fronts and more conspicuous parts of such situations.

CYTONIUM, a town of Afia Minor, on the confines of Lycia and Myidia.

CYTORUS, or Cytorum, a town situated on a part of the coast of Paphlagonia, which is inclined from the south-west to the north-east, between the promontory Carabas and Amastris. It is thought to have been founded by a colony of Miletians. According to Strabo, it had been a port of the inhabitants of Sinope. In its vicinity was a mountain, which produced a beautifully-veined box-tree. Its foundation is ascribed to Cytor, son of Phryxus; and it was one of the four towns which formed the state of Amastris, sister of Darius, and wife of Dionysus, tyrant of Heraclea, at the time of the destruction of the Persian empire. It is mentioned by Pline, Virgil, Suidas, and Xenophon, the latter of whom says that it was a sea-port, where the Greeks embarked; and after having navigated a day and night, they arrived at Sinope.

CYTITIUM, a town situated on the southern part of the island of Cyprus; called by Pline and Ptolemy Cytium.

CYULES, a name given by William of Malmsbury, Gildas, and others, to the long galleys in which the Saxons, under the command of Cerdic, were transported to Britain. Of these galleys there were five, and the number of men conveyed by them was 15,800; and therefore they must have been very capacious, and the barbarians must have been satisfied with very inconvenient accommodations.

CYZICENE Ecus, or hall: a name given to apartments of a particular construction in the ancient villas, and thus explained by Vitruvius. "They are situated towards the north, generally have a view of the garden, and have valved doors in the middle. They are of such a length and breadth, that two triclinia, with their surrounding appendages, may be placed opposite to each other. They have also valved windows on the right and left, that the garden may be seen through their openings, and their height is equal to one and a half their breadths. These Cyzicenes, or Cyzicena, were, among the ancient Greeks, what the triclinia and canona were among the Romans.

CYZICUM Marmor, a species of marble, so called by the ancients from the great use made of it by a flatuary called Cyzicus. It was white, with fine narrow veins of black, and was called also Proconnesus Marmor.

CYZICUS, or Cyzicum, in Ancient Geography, a town in that part of Afia Minor which lay on the Propontis, placed on an island of the Propontis, bearing the same name, but joined to the continent with two bridges by Alexander the Great. It had two ports, which were formed so as to close themselves: one of them, called Panormus, was the work of nature, the other, the production of art, was called Clytus, from the Greek word, denoting a work formed by digging; somewhat similar to the oriental Cuthon. One part of this city was on a plain, another towards Mount Arctos. According to Pline, it consisted of a colony of Myfians. It is said to have borrowed its name from Cyzicus, king of that island and the adjacent continent, who is said to have been killed through mistake by Jaxon, the Argonaut. When this city became first known to the Romans, it was one of the richest and largest in Afia; and hence was styled by Florus, the Rome of Afia, and celebrated for its walls, bulwarks, haven, marble towers, &c. Among its magnificent buildings, the chief temple is particularly celebrated by the ancients;—the whole structure was of polished marble, and the columns covered with lines of gold; the pillars were four cubits thick, and fifty high, each of one piece. The statue of Jupiter, which stood in the temple, was of ivory, and most exquisite workmanship. In subsequent ages, this city made a glorious stand against Mithridates, who left under its walls no fewer than 300,000 men, and after all failed to reduce it. At this time it was distinguished by wise laws, a naval power of 200 galleys, and three arsenals of arms, of military engines, and of corn. (Strabo, l. xii.) But in the year 365, the city and island of Cyzicus were contrained after an honourable defence, to yield to the power of Procopius, aided by the Gothic princes. However, the ancient inhabitants of this city and island were generally deemed a cowardly and effeminate race; into much that a man of a timorous disposition was contemptuously called a "Cyzican." Cicero represents them as a quiet and inoffensive people, unaccustomed to ambitious machinations against the neighbouring nations, and willing to sacrifice every thing to the enjoyment of the sweets of peace.

The current coins of this island, called flater, weighing 18 drams, were engraved with such exactness, nicety, and skill, that they were looked upon in ancient times as a miracle of art. Thece originated the Greek proverb Kyzicen Pates, an expression used in commending any eminent performance in the art of engraving; as if the Cyzican statues were the utmost effort of that art. This coin represented on one side Cybele, the great mother of the gods, and a lion on the other; which has induced some to think that the above-mentioned proverb was a faint on those who boast of their proverbs, and effect to appear like lions, though they be in reality as timid and fearful as women. (Erafin. Childard.)
The inhabitants of Cyzicus made pretensions to very high antiquity; and believed that their city had been given by Jupiter to Proserpine for her dowry, on which account they worshipped her as their chief deity. Apollonius of Tyana has particularly described the beauty, magnificence, richness, and laws of this city. It was ruined by an earthquake; and the fallen marbles and pillars were conveyed to Constantinople, for the embellishment of that city. Under the Romans it was the metropolis of the confular Hellepont, and a metropolitan see under the patriarchate of Constantinople; but it is now little better than a village, known under the names of Chiczico, Spiga, and Polamr.

CZACHEC, in Geography, a town of Lithuania, in the palatinate of Breske; 28 miles E.N.E. of Breske.

CZACSANICHA, a town of Poland, in the palatinate of Braclaw, 36 miles S. of Breslaw.

CZAR, a title of honour assumed by the grand-dukes, or, as they are now styled, emperors of Russia.

The natives pronounce it tsar, or czar; and this, as some have supposed, from Caesar, emperor, from the same fancied relation to the Roman emperors; or account of which they also bear the eagle as a symbol of their empire.

When the czar, Peter I., required his imperial title to be acknowledged by the court of Vienna, there was great difficulty made about it: but the czar shewing them, by his ambassador, an original letter of Maximilian I. to the czar John Bafliowit, the count Zinzendorf, grand chancellor of the court of Vienna, caused the archives of the house of Austria to be searched for the original of that letter; but no such letter was found: however, the hand-writing of the secretary, and the signature of Maximilian, being known and acknowledged, the title of emperor was allowed to Peter and his successors, which they continue to enjoy. This anecdote, M. l'Abbe Langlet acknowledges to have received from count Zinzendorff himself, 1723. "Encyc.

It is generally affirmed, that John Bafliowit, or Ivan Vasilievitch, declared himself czar in the year 1447; though this title is expressly attributed in history to Russian sovereigns of a period far more remote; whether it was actually borne by them, or whether the old annalists added it merely to signify, indiscriminately, a monarchical dignity, or modern historians have arbitrarily applied it to them without sufficient reason. We are told by Lomonosov, in his ancient Russian history, that Vladimir, the Saint, who died in 1015, on his marriage with the Greek princess, took upon him the title of czar. The same author says, in his abridged chronicle, that not only Vladimir Vievoldovitch Monomachus, who began his reign in 1114, was crowned czar of all Russia; but also that Vasili Ivanovitch, who died in 1335, first wrote himself in the last year of his reign, czar and self-holder of all Russia. With regard to the derivation of the term czar or tsar, it has been alleged, that, in the Russian bible, it denotes a king; yet the ancient Russian writers make use of it also when speaking of the Greek emperors. Moreover, the derivative tsarstvo means kingdom; thus, in the peter-noller, tsarstvo tuo, thy kingdom; but also, in general, it signifies empire; and it is even used in the kingdoms of nature.

M. Sperlingius, in his dissertations on the majesty of the name komein, observes, that the Russian princes never bore the name czar, till their people had embraced the Greek faith: before that time, he says, they were called king, kong.

The Russians are the only persons who by czar denote a sovereign; and Mr. Tooke, as to the etymology of the word, thinks it scarcely imaginable that it has been formed by an abbreviation of Caesar and Tzefar; for, throughout the New Testament, where the word occurs, it was rendered by kofar, perhaps from the Greek Bible, which came into Russia with the Christian religion; this was afterwards changed into tzefar, and that again has been altered into tozer.

Mr. Tooke farther observes, that, in the old Russian year-books, mention is frequently made of Tartarian and Siberian tsars, and tzarvetiches (tsar's sons); thus we find, among many other instances, the tsar of the golden hore, the tsar of the krim, the tsar of Kazan.

This title has not been negligently introduced, and appropriated by the Russian historians; for the sovereigns of Russia have borne it since the conquest of those kingdoms, to this day, as it flands in the imperial title; "tsarina of Kazan, tsarina of Siberia, c.e." We may, therefore, sup-pose, says Mr. Tooke, with the highest probability, that the Russian nation, on finding these tsars among the neighbouring people, borrowed the title from them, and adopted it into the Russian language, to which it is entirely foreign.

Tooke's Life of Catharine II. vol. iii.

CZARLAKOW, in Geography, a town of Poland, in the palatinate of Kaminiec; 34 miles W.N.W. of Kaminiec.

CZARNVIKI, a town of Poland, in the palatinate of Podolia; 60 miles N.N.E. of Kaminiec.

CZARNOWCZYCE, a town of Lithuania, in the palatinate of Breske; 10 miles N.E. of Breske.

CZARNOWK, a small town of the grand duchy of Warsaw, which, since the peace of Tilsit, belongs to the kingdom of Saxony. It is situated in the palatinate of Posen; 26 miles N. of Posen.

CZARNOKOZYNIECZ, a town of Poland, in the palatinate of Kaminiec; 12 miles W. of Kaminiec.

CZARSKOEZELO, the famous summer residence of the sovereigns of Russia, about 50 miles from Petersburg, is situated in an open pleasant country, diversified by little hills, meadows, and woodlands. The verists, or dalliances, are marked on the side of the road by columns of marbles, Jasper, and granite; and there are 1500 globular lamps, which are lighted when the court is there.

Czarsozele owes its origin to the empress Catherine I., its embellishments to Elizabeth, and its present tasteful magnificence to Catherine II., grand mother to the emperor Alexander. The gardens are laid out in the English manner. Their principal curiosities are a small temple, containing an exquisite collection of antique and modern statues, a magnificent bath, picturesque artificial ruins; and a small town in commemoration of the acquisition of the Tartars. Storch's Picture of St. Petersburg.

"CZARTORYSK, a small town of Austria, the kingdom of Galicia and Lodomeria, or that part of Poland, which, at the final partition of the country, was allotted to the house of Austria. It has an old castle, and is situated in Volhynia, in the district of Luck, or Luccorien.

CZASLAU, a small town of Austria, situated in Botzamana, on the river Crudiiska; 51 miles S.E. of Prague. It is the capital of the circle of the same name, and was built in 756. The principal church has the highest belfry in Bohemia; it contains the ashes of John Zlifka, the founder of the Hufles, who was buried here in 1424.

CZASONKI, a small town of Russia, in Lithuanian Russia, which formerly was part of Poland, in the diocese of Poland.

CZASTAWSK, a town of Bohemia, in the circle of Czslau; 12 miles S.W. of Ledetcbe.

CZATORISKO, a town of Poland, in the palatinate of Volhynia; 42 miles N.N.E. of Lucka.
CZE

CZATZA, a town of Hungary, on the river Kniffuthia; 124 miles N.N.E. of Vienna, and 48 N. of Cremnitz.

CZAY-KOWKA, a town of Poland, in the patalinate of Volhynia; 38 miles N.E. of Zytomiers.

CZAAT, a town of Croatia; 20 miles S.S.W. of Novi.

CZCRZAN, a town of Poland, in the patalinate of Bracław; 61 miles N.W. of Bracław.

CZCRZAW, a town of Poland, in the patalinate of Biala; 36 miles S.W. of Biala.

CZEBRYN, a town of Poland, in the patalinate of Kiew; 44 miles S.S.E. of Czerkasy.

CZECHTITZ, a town of Böhemia, in the circle of Czernow; 12 miles S.W. of Ledetich.

CZEKZÓRA, a town of European Turkey, in the province of Moldavia; 14 miles E. of Jassy.

CZEILTÉ, a town of Hungary; 20 miles W. of Topolzan.

CZEMEN, in Medicine, a name given by the people of Hungary, and some of the neighbouring nations, to a very troublesome discomposure of the bowels, and lower part of the arms, to which the people of this part of the world are very subject. It confounds a tumour not hard, but very painful to the touch. The general method of cure is, by giving first a strong emetic, and then confining the patient to his bed, and to the use of fodericities, which in some days carry it off. Phil. Trans. No. 243.

CZENSTOCHAU, or CzENSTokoW, Czegskow, in Geography, a small town of the grand duchy of Waraw, which, from the last partition of Poland, until the peace of Tilsit, belonged to Prussia, and is a province of the kingdom of Saxony. It is situated on the river Warta; 90 miles S.E. of Breslin, and 60 N.W. of Cracow. Near this place, on the island of the Czernberg, is a small fortress, with a convent of monks, of the order of St. Paul, the Hermit, celebrated for a picture of the Virgin Mary, which, it is pretended, was painted by the evangelist St. Luke, and which is styled the "Treasure of the Virgin," because it draws pilgrims from all quarters. Czeostochau was considered as the Loreto of Poland.

CZERNETZ, or Tschernick, a town of Walachia, near the north side of the Danube; 44 miles E. of Belgrade, and 106 W. of Bucharest.

CZERNIKOW, CzERNIKOw, or Tschernigow, Tschernig, a town of Russia, in Europe, formerly in the government of Kiew, but which, since the year 1791, constitutes a separate government. It is situated on the river Dnina; 90 miles N.E. of Kiew, and is the site of an archbishop. N. lat. 51° 20'.

CZERNITZ, a small town of Walachia, in that part of the country which belongs to the empire of Austria.

CZERNOMITZ, a town of Hungary, on the river Grab; 11 miles N.N.W. of Bakau.

CZERNOWITZ, a town of Austria, in the kingdom of Galicia and Lodomeria, and chief place of that part of the country called the Buckowina, which became an Austrian province in 1777. It is situated on the river Pruth.

CZERNYODA, a town of European Turkey, in the province of Bulgaria; 42 miles N. of Ternovo.

CZERSKO, or Czersk, a handsome town of the grand duchy of Waraw, which, since the peace of Tilsit, is a province of the kingdom of Saxony. It is the chief place of the district of the same name, and situated on the Vilia; 24 miles S.E. of Waraw. N. lat. 51° 58'.

CZERWENITZA, a poor miserable village of Austria, in upper Hungary, a short day's journey from Czachau, remarkable only for its opal mines. The rocks are formed of decomposed porphyry and tuffs. The hill is some miles in extent, and has been opened in several places, and most successfully in three particular spots, where guards are stationed to prevent strangers from digging. These mines yield several different kinds of opal, some of no value to the jeweller. It is, however, supposed, that the most valuable opals which pass in commerce under the name of oriental opals are really from the mines of Czerwencita. Tavernier, part ii. p. 293, says: "Pour ce qui est de la Hongrie, il y a une mine d'où l'on tire des Opals, et il ne l'ont trouvée en aucun lieu de la terre qu'en celui là." Mr. Pichtel, in his "Mineralogische Bemerkungen von den Carpathien," that is to say, mineralogical observations on the Carpathian mountains, page 395, is of the same opinion, and affirms there are papers in the archives at Czachau, which show that, about four centuries ago, 350 men were engaged in those mines, which circumstance would account for the quantity of opals that has been for so long a time in the market.

The mines of Czerwencita produced, perhaps, that very opal, to obtain which Anthony could prescribe a Roman senator, and to keep which a Roman senator could suffer banishment. Townson's Travels in Hungary.

CZESTIN, a town of Bohemia, in the circle of Czestochau; 13 miles from Czestachau.

CZETEZWUTA, a town of European Turkey, in the province of Moldavia; 6 miles S. of Jassy.

CZETNEK, a town of Hungary; 26 miles W. of Czecznor.

CZETWERNIA, a town of Poland, in the patalinate of Volhynia; 16 miles N. of Luckow.

CZIEZER, a town of Hungary; 21 miles E. of Czecznor.

CZIFFEN, a small town of Austria, in Lower Hungary, situated on an extensive plain, and formerly a place of some consequence.

CZIGLED, a town of Austria in Lower Hungary, in the distrit of Kettkemet. It is situated in a very fertile country, and belongs to the nuns of St. Clara at Buda. After the battle of Siccumbria, it became the residence of the Zucklers, who were among the principal leaders of the Transylvanians.

CZIGLIEN, a town of Schalovia; 7 miles N.W. of Brod.

CZIRKNITZ. See Cirknitz.

CZINKNITZ. See Cirknitz.

CZIRNIECHOW, a town of Poland, in the patalinate of Volhynia; 12 miles W. of Zytomiers.

CZIROKOGRODNA, a town of Poland, in the patalinate of Bracław; 54 miles N.W. of Bracław.

CZINCIKOW, a town of Poland, in the patalinate of Sandomirz; 24 miles N.W. of Sandomirz.

CZIOCHWIACE, a town of Poland, in the patalinate of Sandomirz; 18 miles S.S.W. of Bresla.

CZUKERMANDEL, a small town of Austria, in Lower Hungary, in the disrit of Preßburg, not far from Preßburg castle, inhabited chiefly by Jews.

CZUDNATZ. See Czudnitz.

CZUDNOL, a small town of Poland, in the patalinate of Lublin; 40 miles N.W. of Lublin.

CZUDNO, a small town of Turkey, in Europe, in Upper Moldavia, on the river Pruth.

CZUGUR, a river of European Turkey, in the province of Moldavia; which runs into the Pruth, near Stepansowicz.

CZUWACHINS,
CZU

CZUWACHIANS, a tribe of Tartars dispersed over the right bank of the Wolga, in the government of Kafan, and extending as far as Ufa, in that of Orenburg; and, on this account, denominated Ufan Tartars. They are a very laborious people; and their number is said to amount to upwards of 100 thousand persons, inhabiting small towns, and a great number of villages. Their two chief places are Silifgorod and Kofihatik. They acknowledge the god, named Tor, but pay almost an equal worship to the sun. They have no temples; but, in the midst of forests, pay their homage to Tor, and offer sacrifices, consisting of black lambs, which, in the lamb-seasom, they slaughter in such numbers as their jumak, or high priest, has ordered. The yumaşka, who are priests subordinate to the jumak, possess the greatest authority among the Ufan Tartars. These are their only physicians, when any are ill; the only judges to whom they appeal for deciding their disputes; and the only counsellors to whom they apply for advice in affairs of moment. Like the other Tartars, they abstain from hog's flesh, and from working on Friday. They annually celebrate a kind of Easter, at a place, and on the day determined by the grand jumak. Every family repairs thither with the most profound meditaon, carrying their lamb, which is killed in the name of Tor, and after the sacrifice it is eaten by those who brought it. All of them use nearly the same kind of dress, and the same kind of food with the Bashkirians, whom they also resemble in their manners. Chantrey’s Travels.

CZYRCASSY, Czyrkassy, or Czircaffa, in Latin Czircaffia, a small town of Russia, in Europe, in the Ukraine, situated on the Dnieper, in the government of Kiew, or Kiow; 105 miles S.E. of Kiow. It has an old castle.

END OF VOL. X.