is nothing taken, either for the King, or for the Expences of *Coining*; it having been settled by Act of Parliament, that all Money should be struck at the publick Expence: so that Weight is return'd for Weight, to all Persons who carry their Gold or Silver to the *Tower*. See SEIGNORAGE.

The Species *coin'd* in *England*, are esteem'd contraband Goods, and not to be exported: All foreign Species are allow'd by Act of Parliament, made in 1673, to be sent out of the Realm; as well as Gold and Silver in Bars, Ingots, Dust, &c. Indeed, in the Session of Parliament in 1718, Endeavours were made to put a stop to this License, which drains *England* of its richest Metals; but in vain; the Parliament having set aside the Bill, without coming to any Resolution.

The Spanish COINAGE is esteem'd one of the least perfect in *Europe*: It is settled at *Sevil* and *Segovia*, the only Cities where Gold and Silver are struck. 'Tis true, there are brought from *Mexico*, *Peru*, and other Provinces of the *Spanish America*, such vast Quantities of Pieces of Eight, and other Species, both of Gold and Silver, that, in this respect, it must be own'd, there is no State in the World where so much Money is *coin'd*, as in that of the King of *Spain*.

Muscovite COINAGE. The Czar strikes no Money but *Silver*, and that only in the Cities of *Mosco*, *Novogrod*, *Twere*, and *Plescou*; to which may be now added *Petersburg*, the favourite City of his Czarian Majesty. The *Coinage* of each of these Cities is let out to farm, and makes part of the Royal Revenue.

Persian COINAGE. All the Money made in *Persia*, is struck with the Hammer: and the same may be understood of the rest of *Asia* and *America*, and the Coasts of *Africa*, and even *Muscovy*; the Invention of the Mill being not yet got out of *Europe*, nor even establish'd in every Part of it. The King's Duty, in *Persia*, is seven and a half *per Cent.* for all the Monies *coin'd*; which are now reduced to *Silver* and *Copper*: there being no *Gold* coin'd there, except a kind of Medals at the Accession of a new Sophi.

The COINAGE *of Fez and Tunis* is not under any Discipline; each Goldsmith, Jew, and even private Person, undertaking it at pleasure: which renders their Money exceeding bad, and their Commerce very unsafe.

COITION, the Intercourse between Male and Female in the Act of Generation. See GENERATION.

It is observ'd, that Frogs are 40 Days in the Act of *Coition*. *Bartholine*, &c. relate, that Butterflies make 130 Vibrations of the Wings in *Coition*.

COITION is also sometimes used for that mutual Attraction, or Tendency toward each other, which is found between Iron and the Magnet. See MAGNET.

COLARBASIANS, a Sect of Hereticks in the IId Century; so called from their Leader *Colarbasus*, a Disciple of *Valentine*: who, with *Marcus*, another Disciple of the same Master, maintain'd the whole Plenitude, and Perfection of Truth and Religion, to be contain'd in the *Greek* Alphabet; and that 'twas upon this account Jesus Christ was called the *Alpha* and *Omega*.

COLARIN, in Architecture, the little Frise of the Capital of the *Tuscan* and *Doric* Column; plac'd between the Astragal, and the Annulets: called by *Vitruvius*, *Hypotrachelium*. See FRIZE, &c.

COLARIN is also used for the Orlo, or Ring, a-top of the Shaft of the Column, next the Capital; called also *Cincture*. See CINCTURE.

COLATURE, in Pharmacy, the Separation of a Liquor from some Mixture, or Impurity, by *percolating*, or straining it thro' the narrow Pores of a Cloth, or other Matter; which will give passage to the fine, and pure Part, but intercept the grosser. See PERCOLATION, and FILTRATION.

COLCOTHAR, in Natural History, &c. There are two Kinds of *Colcothar*, *Natural* and *Factitious*.

The *Natural* is otherwise called *Chalcitis*; being a red Vitriol, brought from *Germany*; form'd from the common green Vitriol, calcin'd naturally by some subterraneous Fire. See CHALCITIS.

The *Artificial* is also a green Vitriol, calcin'd a long time by an intense Fire; and by that means reduc'd to the redness of Blood.

COLCOTHAR *Vitrioli*, is particularly us'd for the Dregs, or Remains, left at the Bottom of the Vessel, after the Distillation of Vitriol. See VITRIOL.

COLD, something devoid of Heat, or which contains in it no Particles of Fire. See FIRE.

This Definition is agreeable to the Sentiments of most of the modern Philosophers, who make *Cold* a mere negative Term; and suppose the Thing to consist in a mere Privation, or Diminution of Heat.

Others define *Cold*, much on the same Principle, to be that State of the minute Parts of a Body, wherein they are more slowly and faintly agitated than those of the Organs of Feeling: In which Sense, *Cold* is a mere Term of Relation; and hence the same Body becomes liable to be perceiv'd *hot* or *cold*, as its Particles are in a greater or less degree of Motion than those of the sensible Organs. See SENSE, FEELING, &c.

Heat is suppos'd to consist in a particular Motion of the Parts of the *hot* Body; and hence the Nature of *Cold*, which is its opposite, is easily deducible: For *Cold*, we find, extinguishes, or rather abates Heat; whence it seems to follow, that those Bodies are *cold*, which check and restrain the Motion of the Particles wherein Heat consists. See HEAT.

Now, there are three Kinds of Bodies which may do this, *viz.* either those whose Particles are perfectly at rest; or those whose Particles are indeed agitated, but less violently than those of the hot Body to which they are applied: or, lastly, those whose Particles have a Motion proper for exciting the Sensation of *Heat*, but move with a different Determination; so as to retain and change the Motion of the Particles of the Organ.

Hence, there arise three different Kinds of *Cold*, or *cold Bodies*: The 1st is, that *Cold* common to all hard Bodies, which consists in the Rest of their Parts. The 2d is that which arises on plunging any Part of the Body in Water; which consists in this, that the Parts of our *Præcordia* being more briskly agitated than those of the Fluid, communicate part of their Motion to it. The 3d, the *Cold* felt on collecting even warm Air with a Fan, or in blowing hot Breath out of our Mouth, with the Lips close shut; which consists in this, that the direct Motion of the Particles of Air, do in some measure change and rebate the Motion and Determination of the Parts of the Body: And hence it is, that a *cold* Body cannot cool another without heating it self. Hence also it is, that the more Parts of a frigid Body are at rest, the more must the Particles of a warm Body applied to heat 'em, lose of their Motion, and by consequence of their Heat. Thus a Marble having more quiescent Parts than Wood, which is full of Pores and Interstices, is felt *colder* than Wood. Hence also we see why Air, near Marble and other dense Bodies, feels somewhat *colder* than in other Places.

On this Principle, the two latter Kinds of *Cold* appear somewhat more than Privations: The Particles inducing the *Cold*, may be esteem'd real frigorific Corpuscles; and *Coldness* be deem'd a real Quality as well as Hotness. See QUALITY, FRIGORIFIC, &c.

These Particles do not only check the Agitation of those continually diffus'd from the inner Parts of the Animal to the outer; but, having an elastick Power, bend and hang about the Filaments of the Body, pinch and squeeze them; and hence that acute pungent Sensation called *Cold*.

That *Cold* is more than a mere Relation, or Comparison, is evident from its having real and positive Effects; such as Freezing, Congelation, Condensation, Rarefaction, Bursting, &c. See FREEZING, &c.

Dr. *Clark* takes *Cold* to be owing to certain nitrous, and other saline Particles, endued with particular Figures proper to produce such Effects. Hence, Sal Ammoniac, Salt Petre, or Salt of Urine, and many other volatile and alkalizate Salts, mix'd with Water, increase its degree of *cold* very sensibly. Hence also that popular Observation, that *Cold* prevents Corruption; which, however, must not be admitted without an Exception: since, if a hard, porous Body have its Interstices fill'd with Water, and this be too much dilated by freezing, the including Body will be burst. And thus it is, that *Cold* proves destructive to the Parts of some Plants. See ICE, FROST, CONDENSATION, RAREFACTION, &c.

COLIC, in Medicine, a cruel, severe, gnawing Pain, felt in the lower Venter; so called, because the ordinary Seat of the Disorder, was antiently suppos'd to be in the Intestine *Colon*.

Physicians usually distinguish three Kinds of *Colic*, the *Bilious*, *Windy*, and *Nephritic*.

The *bilious Colic* has its rise from certain sharp, bilious, stimulating Humours, which being diffus'd thro' the Intestines, vellicate their Fibres, and occasion a Sensation of Pain. Tho *Willis* takes the Part principally affected to be the Mesentery.

Dr. *Sydenham* observes, that the *bilious Colic* usually attacks about the beginning of Summer; that it's generally attended with a Vomiting of bilious green Liquor; that the Patient complains of excessive Heat, great Gripings, Faintness, &c. and that if it be not soon remedy'd, it is apt to turn into the Iliac Passion. See ILIAC *Passion*.

Baglivi notes, that if the Patient sweat much, and be much enfeebled; the Disease is apt to degenerate into a Palsy. The Cure, he says, depends on Bleeding, gentle Cathartics, and Enemas; and if it arise from a *Crapula*, an Emetic is to precede: after which, the Cure is to be compleated with proper Anodynes.

The *Wind Colic* is vagabond, never staying in any fixed Place; being produc'd by windy Vapours, which swell and distend the Intestines they are inclos'd in.

The *Nephritic Colic* is felt particularly in the Reins, whence it has its Name; the *Greek* νεφρὸς signifying *Rein*. See NEPHRITIC.

It usually has its rise from some Stone, or Gravel detach'd from the Kidnies, and fallen into the Pelvis. The *Pareira Brava* is said to be a Specific for *Nephritic Colics*. See PAREIRA BRAVA.

S. Manouchi, a *Venetian* Physician at the Court of the Great *Mogul*, gives the following Remedy as infallible in Nephritic Cases: An Iron Ring, about an Inch and half in Diameter, and thick in proportion, is to be heated red-hot; then, laying the Patient on his Back, the red-hot Ring is to be apply'd to his Navel, so, as that the Navel be in the Centre of the Ring: The Patient will presently feel the Pain, which will occasion him to shrink back very suddenly; the sudden Revulsion thus occasion'd in the lower Venter, will in a little time dissipate all his Pains. The same Author adds, that he can warrant the Success of the Remedy.

In *Colics* arising from Flatulencies, Carminative Waters, Oils, Aromaticks, &c. are always to be added to the Compositions: And in *Nephritic Colics*, besides Emollient Clysters, Solutions of Manna, Cremor Tartari, &c. in Whey, &c. and proper oleaginous Mixtures, are to be exhibited to relax the Fibres; after which, proper Anodynes take place.

Some, particularly *Sydenham*, mention a *Nervous Colic*, mostly incident to hysteric and hypochondriac Persons; but this appears only a Species of the *Windy Colic*.

Baglivi recommends Camomile as an Antidote against the *Colic*, from what Cause soever it arise. Where the Disease is obstinate, much riding is of especial Service.

COLIR, an Officer in *China*, who has an Eye over what passes in every Court, or Tribunal in the Empire; and tho himself not of the Number, yet is assisting at all Assemblies, the Proceedings whereof are communicated to him.

He is properly what we may call an *Inspector*: He gives secret Intelligences to the Court; and even, on occasion, accuses the Mandarins of their Faults openly; and that not only of Faults in their publick Offices, but even in their private Life. To keep him impartial, he is kept independent; by having the Post for Life. These *Colirs* make even the Princes of the Blood tremble.

COLLAR, a particular Ornament, wore by the Knights of several Military Orders, hanging over their Shoulder, on the Mantle; and its Figure drawn around their Armories. See KNIGHT.

The *Collar* ordinarily consists of a Chain of Gold, enamell'd; frequently set with Cyphers, or other Devises, and having the Badge of the Order suspended at Bottom.

The *Collar* of the Order of the Garter, consists of SS, with Roses enamell'd red, within a Garter enamell'd blue, the *George* at the Bottom. See GARTER.

Maximilian is said to have been the first of the Emperors who put the *Collar* of an Order around his Arms, upon his being made Chief of that of the Golden Fleece.

Knights of the COLLAR, a Military Order in the Republick of *Venice*; called also the *Order of St.* Mark, or *the Medal*.

'Tis the Doge and the Senate that confer this Order: The Knights bear no particular Habit, only the *Collar*, or Chain, which the Doge puts around the Neck; with a Medal, whereon is represented the winged Lion of the Republick.

COLLATERAL, in Geography, any Thing, Place, Country, &c. situate by the Side of another.

The Word is a Compound of *con*, with, and *latus*, side; and chiefly applied to the Winds, which blow a-side of those in the Cardinal Points of the Horizon; as the North-East, South-East, North-West, South-West, and their Subdivisions.

COLLATERAL *Points*, in Cosmography, the intermediate Points; or those between the Cardinal Points. See CARDINAL *Points*.

The *Collateral Points* are either *Primary*, which are those removed by an equal Angle on each side, from two Cardinal Points: or *Secondary*; which, again, are either those of the first, or second Order. The first, those equally distant from a Cardinal and first Primary; the latter equally distant from some Cardinal or Primary, and first Secondary. See POINT.

COLLATERAL *Winds*, those blowing from *Collateral* Points. See WIND.

COLLATERAL, in Matters of Genealogy, is understood of those Relations which proceed from the same Stock, but not in the same Line of Ascendants, or Descendants; but being, as it were, aside of each other.

Thus, Uncles, Aunts, Nephews, Nieces, and Cousins, are *Collaterals*, or in the *Collateral* Line. Those in a higher Degree, and nearer the common Root, represent a kind of Paternity with regard to those more remote; but there is a kind of Equality between *Collaterals* in the same Degree.

Thus, *collateral* Descent stands in opposition to *direct* Descent to Posterity; the former passing to Brothers Children, but the latter only from Father to Son.

COLLATERAL *Assurance*, is a Bond, made over, and beyond the Deed it self, for the Performance of Covenants between Man and Man; thus called, as being external, and without the Nature and Essence of the Covenant.

Crompton says, that to be subject to the feeding of the King's Deer, is *collateral* to the Soil within the Forest. It may be added, that liberty to pitch Booths in a Fair, or another Man's Ground, is *collateral* to the Ground.

COLLATERALIS *Penis*, in Anatomy, a Muscle, otherwise called *Errigens*, or *Erector Penis*. See ERECTOR.

COLLATION, in the Canon Law, the conferring, or bestowing of a Benefice by a Bishop, who has it in his own Gift, or Patronage. See BENEFICE, and PATRONAGE.

Collation differs from *Institution*, in that the latter is perform'd by the Bishop, at the Motion or Presentation of another: (see INSTITUTION.) And the former on his own Motion.

Collation also differs from *Presentation*, in that the latter is properly the Act of a Patron, offering his Clerk to the Bishop, to be instituted into a Benefice; whereas the former is the Act of the Bishop himself. See PRESENTATION.

The *Collator* can never confer a Benefice on himself.

In the *Romish* Church, the Pope is the *Collator* of all Benefices, even elective ones, by Prevention; setting aside Consistorial Benefices, and those in the Nomination of Lay-Patrons. Prelates and Bishops are call'd *Ordinaries*, or ordinary *Collators*. See ORDINARY, &c.

If the Ordinary *Collator* neglect to exercise his Right for six Months, the superior *Collator* may *collate* by Devolution. Thus, if the Bishop neglect, the Metropolitan may confer; then the Primate; and so on from degree to degree.

In *France*, the King is the *Collator* of all Benefices, whereof he is Patron, excepting Consistorial ones; to which he has only the Nomination; and the Pope, by Virtue of the *Concordat*, is oblig'd to confer on whomsoever the King nominates. For the rest, he is direct and absolute *Collator*; and may confer 'em, by Virtue of a kind of Priesthood annex'd to the Royalty.

Other Lay-Patrons have seldom more than a mere Presentation; the *Collation* properly belonging to the Bishop: yet there are Abbots who have the full Right of *Collation*.

The Canonists reckon two Kinds of *Collation*; the one *Free*, and Voluntary, the other *Necessary*. The first depending on the mere Will of the *Collator*, who may chuse whom he pleases to fill the Vacancy. In the latter, the *Collator* is not at his liberty: which is the Case where a Benefice has been resign'd, or chang'd, and that Resignation or Permutation allow'd of by the Superior; for here the *Collator* is oblig'd to grant the Provision to the Resignatory, or Compermutant.

'Tis a Maxim in the New Canon Law, *Collationes sunt in fructibus*; 'Those who have the Fruits of a Benefice have 'the *Collation*.' But in that Case, the Word *Collation* is us'd for Presentation. See PRESENTATION, &c.

A *collated* Act is equivalent to an Original; provided all the Parties concern'd were present at the *Collation*.

COLLATION, in Common Law, is the Comparison, or Presentation of a Copy to its Original, to see whether or no it be conformable: or the Report, or Act of the Officer who made the Comparison.

COLLATION is also used among the *Romanists* for the Meal or Repast made on a Fast-Day, in lieu of a Supper. See FAST.

Fruits are not allow'd in a *Collation*: F. *Lobineau* observes, that antiently there was not allow'd, even, bread in the *Collations* in Lent; nor any thing beside a few Confitures and dried Herbs, and Fruits: which Custom, he adds, obtain'd till the Year 1513.

Cardinal *Humbart* observes further, that in the middle of the XIth Century, there were no *Collations* at all allow'd in the *Latin* Church in the time of Lent; and that the Custom of *Collations* was borrow'd from the *Greeks*; who themselves did not take it up till about the XIth Century. See LENT.

COLLATION is also popularly us'd for a Repast between Dinner and Supper.

The Word *Collation*, in this Sense, *Du Cange* derives from *Collocutio*, Conference; and maintains, that originally, *Collation* was only a Conference, or Conversation on Subjects of Piety, held on Fast-Days in Monasteries; but that, by degrees, the Custom was introduced of bringing in a few Refreshments: and that by the Excesses to which those sober Repasts were at length carried, the Name of the Abuse was retain'd, but that of the Thing lost.

COLLEAGUE, a Companion, Partner, or Associate in the same Office, or Magistrature.

The Word is particularly us'd in speaking of the *Roman* Consuls, and Emperors.

COLLECT, or COLLECTION, a voluntary gathering of Money, for some pious, or charitable Purpose.

Some say, the Name *Collect*, or *Collection*, was used, by reason those Gatherings were antiently made on the Days of *Collects*, and in *Collects*, *i. e.* in Assemblies of Christians; but, more probably, *quia colligebatur pecunia*.

The Word is sometimes also used for a Tax, or Imposition, rais'd by a Prince for any pious Design. Thus, Histories say, that in 1166, the King of *England*, coming into *Normandy*, ap-

appointed a *Collect* for the Relief of the Holy Land, at the Desire, and after the Example of the King of *France*.

Collect, in the Liturgy of the Church of *England*, and the Mass of the *Romanists*, a Prayer accommodated to any particular Day, Occasion, or the like. See Liturgy, and Mass.

In the general, all the Prayers in each Office are call'd *Collects*; either because the Priest speaks in the Name of the whole Assembly, whose Sentiments and Desires he sums up by the Word *Oremus*, Let us pray; as is observ'd by Pope *Innocent* III. or, because those Prayers are offer'd when the People are assembled together; which is the Opinion of *Pamelius* on *Tertullian*.

The Assembly it self is in some antient Authors called *Collect*. The Popes *Gelasus* and *Gregory* are said to have been the first who establish'd *Collects*. *Despense*, a Doctor of the Faculty of *Paris*, has an express Treatise on *Collects*, their Origin, Antiquity, Authors, &c.

COLLECTIVE, in Grammar, a Term applied to a Word that expresses a multitude; tho it self be singular.

Thus, Troop, Company, Army, are Nouns *Collective*.

COLLECTOR, a Person nominated by the Commissioners of any Duty, the Inhabitants of a Parish, or the like, to raise or gather any Tax, &c.

COLLEGATARY, in the Civil Law, a Person to whom is left a Legacy in common with one or more other Persons. See Legacy.

If the Thing be bequeath'd *in solido*, the Portion of the deceased *Collegatory* accrues to the rest.

COLLEGE, an Assemblage of several Bodies, or Societies; or, even of several Persons into one Society. See Society.

The Term *College*, among the *Romans*, was used for an Assemblage of several Persons employ'd in the same Functions, and as it were bound together to act, or serve in concert. It serv'd indifferently for those employ'd in the Offices of Religion, of Government, the Liberal Arts, and even Mechanical Arts, or Trades: So that the Word properly signified what we call a *Corporation*, or *Company*. See Corporation.

In the *Roman* Empire, there were not only the *College of Augurs*, and the *College of Capitolini*, *i. e.* of those who had the Superintendence of the *Capitoline* Games; but also the *College* of Artificers, *Collegium Artificum*; the *College* of Carpenters, *Fabricorum*, or *Fabrorum Tignariorum*; of Potters, *Figulorum*; of Founders, *Ærariorum*; the *College* of Locksmiths, *Fabrorum Serrariorum*; of Engineers, for the Army, *Tignariorum*; of Butchers, *Laniorum*; of Dendrophori, *Dendrophorum*; of Centonaries, *Centonariorum*; of Makers of Military Casaques, *Sagariorum*; of Tent-makers, *Tabernaculariorum*; of Bakers, *Pistorum*; of Musicians, *Tibicinum*, &c.

Plutarch observes, that it was *Numa* who first divided the People into *Colleges*; which he did, to the End that each consulting the Interests of their *College*, whereby they were divided from the Citizens of the other *Colleges*, they might not enter into any general Conspiracy against the publick Repose.

Colleges were distinguish'd from other Societies, not form'd into *Colleges* by publick Authority, in this, that those who compos'd a *College* were qualify'd to treat of the common Interests of their *College*, which was, as it were, a Member of the State, and had a common Purse, an Agent to negotiate their Affairs, sent Deputies to the Magistrates when they wanted to treat with them; might make Statutes and By-Laws for the Administration of their *College*, &c. (See *Plutarch*, *Pliny*, *Cicero*, *Aul. Gellius*, the *Pandects*, *Code*, &c.)

There are various *Colleges* on foot among the Moderns, built on the Model of those of the Antients; as the *Three Colleges of the Empire*, viz. the *College of Electors*, *College of Princes*, and *College of Cities*, &c.

College *of Electors*, is the Body of Electors, or their Deputies, assembled in the Diet at *Ratisbon*. See Elector.

Antiently, the King of *Bohemia* had no Deputy in their *College*; at present he has. See Diet.

College of Princes, is the Body of Princes, or their Deputies, at the Diet of *Ratisbon*.

College of Cities, is, in like manner, the Body of Deputies which the several Imperial Cities send to the Diet.

College *of Cardinals*, or the *Sacred* College, is a Body compos'd of the three Orders of Cardinals, *viz.* Cardinal-Bishops, Cardinal-Priests, and Cardinal-Deacons. See Cardinal.

Each Order has its Dean, or Chief. The Dean of the Cardinal-Bishops is always the Bishop of *Ostia*.

College is also us'd for a publick Place, endow'd with certain Revenues; where the several Parts of Learning, both Divine and Human, are taught, in Schools, Halls, or Classes, appointed for that Purpose.

An Assemblage of several of these *Colleges* constitute an University. See University.

The University of *Oxford* consists of 18 *Colleges*; that of *Cambridge* of 16; that of *Paris* of 50 *Colleges*.

The Erection of *Colleges* is part of the Royal Prerogative, and not to be done without the King's Consent.

Among the *Greeks*, the *Lyceum* and *Academy* were the celebrated *Colleges*; the latter of which has given its Name to our Universities, which in *Latin* are called *Academiæ*. With them, the House, or Apartment of each Philosopher, or Rhetor, might be esteem'd a kind of *College* of it self. See Lyceum, and Academy.

The *Romans* came late into the Institution of such *Colleges*: They had, however, several, founded by their Emperors; especially in *Gaul*; the chief whereof were those of *Marseilles*, *Lions*, *Besancon*, and *Bourdeaux*.

The *Jews*, and *Egyptians* too, have had their *Colleges*; the Chief of the first were those of *Jerusalem*, *Tiberias*, *Nardea*, *Pompodita*, *Sura*, and *Babylon*: this last is said to have been instituted by *Ezekiel*, and to have subsisted in the Time of *Mahomet*.

Colleges of this kind have been generally in the Hands of those consecrated to the Offices of Religion: The *Magi* in *Persia*, the *Gymnosophists* in the *Indies*, the *Druids* in *Gaul* and *Britain*, had the Care of educating Youth in the Sciences. After Christianity became establish'd, there were almost as many *Colleges* as Monasteries; *Charlemaign*, in his *Capitularies*, enjoining the Monks to instruct Youths in Musick, Grammar, and Arithmetick: But, this, calling the Monks from their Solitude, and taking up too much of their time, the Care of the *Colleges* was at length put into the Hands of those who had nothing else to do. See School.

In the Canon Law, 'tis said, Three Persons make a *College*, *Tres Collegium faciunt*.

The *Colleges* in *London* are,

Sion-College, or the *College* of the *London* Clergy; which has been a Religious House time out of Mind: sometimes under the Denomination of a Priory, or *College*; sometimes under that of a Spittal, or Hospital; as, at its Dissolution under 31 *Hen.* VIII. it was called *Elsyn's Spittle*, from the Name of its Founder, a Mercer, in 1329.

At present it is a Composition of both, *viz.* a *College* for the Clergy of *London*, who were incorporated in 1631, at the Request of Dr. *White*, under the Name of the *President and Fellows of* Sion College; and an Hospital for ten poor Men, and as many Women. See Hospital.

The Officers of the Corporation are the President, two Deans, and four Assistants; who are annually chosen from among the Rectors and Vicars of *London*; subject to the Visitation of the Bishop. They have a good Library, built and stock'd by Mr. *Simson*, chiefly for the Clergy of the City, without excluding other Students on certain Terms; and a Hall, with Chambers for Students, generally filled with the Ministers of the neighbouring Parishes.

College *of Civilians*, commonly call'd *Doctors-Commons*; a *College* founded by Dr. *Harvey*, Dean of the Arches, for the Professors of the Civil Law residing in this City; where usually, likewise reside the Judge of the Arches Court of *Canterbury*, Judge of the Admiralty, of the Prerogative Court, &c. with other Civilians; who all live, as to Diet and Lodging, in a *Collegiate* manner, commoning together: whence the Appellation of *Doctors-Commons*.

Their House being consum'd in the great Fire, they all resided at *Exeter-House* in the *Strand*, till 1672; when their former House was rebuilt, at their own Expence, in a very splendid manner. To this *College* belong 34 Proctors; who make themselves Parties for their Clients, manage their Causes, &c. See Proctor.

College *of Physicians*, a Corporation of Physicians, in *London*; who, by several Charters and Acts of Parliament of *Henry* VIII. and his Successors, have certain Privileges, whereby no Man, tho a Graduate in Physick of any University, may, without License under the said *College*-Seal, practise Physick, in, or within seven Miles of *London*; nor even in any other part of *England*, unless he have taken the Degree in one of our own Universities: with Power to administer Oaths, fine and imprison Offenders, in that and several other Particulars: to search the Apothecaries Shops, &c. in and about *London*, to see if their Drugs, &c. be wholesom, and their Compositions according to the Form prescrib'd by the said *College* in their Dispensatory.

By the said Charter they are also freed from all troublesom Offices; as to serve on Juries, be Constable, keep Watch, provide Arms, &c.

This Society had antiently a *College* in *Knightrider-street*, the Gift of Dr. *Linacre*, Physician to King *Henry* VIII. Since that, they have had a House built 'em by the famous Dr. *Harvey*, in 1652, at the end of *Amen-street*, which he endow'd with his whole Inheritance in his Lifetime; but this being burnt in the great Fire in 1666, a new one was erected at the Expence of the Fellows, in *Warwick Lane*; with a noble Library; given partly by the Marquis of *Dorchester*, and partly by Sir *Theodore Mayerne*.

Of this *College* there is a President, four Censors, and 12 Electors: The Censors have, by Charter, Power to survey, govern, and arrest all Physicians, or others practising Physick, in,

in, or within seven Miles of *London*; to fine, amerce, and imprison them at discretion.

The Number of Fellows was antiently 30, till King *Charles* II. increas'd their number to 40; and King *James* II. giving 'em a new Charter, allow'd the Number of Fellows to be enlarg'd, so as not to exceed fourscore; reserving to himself and Successors, the Power of placing and displacing any of 'em for the future.

The *College* are not very rigorous in asserting their Privileges; there being a great Number of Physicians, some of very good Abilities, who practise in *London*, &c. without their License; and are conniv'd at by the *College*: yet, by Law, if any Person, not expresly allow'd to practise, take on him the Cure of any Disease, and the Patient die under his hand, 'tis deem'd Felony in the Practicer.

In 1696, the *College* made a Subscription, to the Number of 42 of their Members, to set on foot a Dispensatory, for the Relief of the sick Poor: since that, they have erected two other Dispensatories. See DISPENSATORY.

Gresham COLLEGE, or COLLEGE *of Philosophy*; a *College* founded by Sir *Tho. Gresham*, and endow'd with the Revenue of the *Royal-Exchange*: One Moiety of this Endowment the Founder bequeath'd to the Mayor, and Aldermen of *London*, and their Successors, in trust, that they should find four able Persons to read within the *College*, Divinity, Geometry, Astronomy, and Musick; and to allow each, besides Lodging, 50 Pounds *per Ann.*

The other Moiety he left to the Company of Mercers, to find three more able Persons, to read Civil Law, Physick, and Rhetorick, on the same Terms; with this Limitation, that the several Lecturers should read in Term-time, every Day in the Week, except Sundays; in the Morning in *Latin*, in the Afternoon the same in *English*: that in Musick to be only read in *English*.

In this *College* formerly met the *Royal Society*, that noble Academy, instituted by K. *Charles* II. and celebrated thro'out the World, for their Improvements in Natural Knowledge. *See their History and Policy, under* SOCIETY.

COLLEGE *of Heralds*, or COLLEGE *of Arms*, a Corporation founded by Charter of King *Richard* III. who granted 'em several Privileges; as, to be free from Subsidies, Tolls, Offices, &c. See HERALD.

They had a second Charter from King *Edward* VI. and a House built near *Doctors-Commons*, by the Earl of *Derby*, in the Reign of King *Henry* VII. was given 'em by the Duke of *Norfolk*, in the Reign of Queen *Mary*; which House is now rebuilt.

Of this *Collegiate* Society, are three Officers stiled *Kings of Arms*, *Reges Armorum Anglicorum*. See KING *at Arms*. Six Heralds. See HERALD. And four Pursuivants. See PURSUIVANT.

COLLEGES *of Common Law*. See INNS *of Court*, and *Chancery*.

COLLEGES *for disabled Soldiers*, *Seamen*, &c. See HOSPITALS.

COLLEGIANS, a Religious Sect, form'd among the *Arminians* and *Anabaptists* in *Holland*; so called, because of their *Colleges*, or Meetings the first Sunday in each Month; where every one has the same Liberty of expounding the Scripture, Praying, &c.

They are said to be all either *Arians*, or *Socinians*: They never Communicate in the *College*, but meet twice a Year from all Parts of *Holland* at *Rinsbourgh*, a Village two Miles from *Leyden*, where they Communicate together; admitting every one that presents himself, without regard to his Sect or Opinion. They have no particular Ministers, but each officiates as he is dispos'd. They never baptize without plunging.

COLLEGIATE, or COLLEGIAL *Churches*, are those which have no Bishop's See; yet have the antient Retinue of the Bishop, the Canons and Prebends. See CHURCH, CANON, &c.

Such are, among us, *Westminster*, *Rippon*, *Windsor*, &c.

Of these *Collegiate* Churches there are two Kinds; some of Royal Foundation, others of Ecclesiastical Foundation: each of them, in Matters of Divine Service, are regulated in the same manner as the Cathedrals. See CATHEDRAL.

There are even some *Collegiate* Churches which have the Episcopal Rights. Some of these Churches were antiently Abbies; which, in time, were seculariz'd. See ABBY.

The Church of *St. Peter's Westminster* was antiently a Cathedral; but the Revenues of the Monastery being by Act of Parliament 1° *Eliz.* vested in the Dean and Chapter, it commenc'd a *Collegiate* Church.

In several Causes, the stiling it *Cathedral*, instead of *Collegiate Church of Westminster*, has occasion'd Error in the Pleadings.

COLLETICS, in Medicine, such Remedies as join, and glue together the separated Parts, or Lips of a Wound, or Ulcer; in order to re-establish 'em in their natural Union. See AGGLUTINANT, WOUND, &c.

Colleticks are more deficcative than Sarcotics; but less so than Epulotics. See SARCOTICS, and EPULOTICS.

Among *Colletics* are rank'd Litharge, Aloes, Myrrh, &c.

The Word comes from the *Greek* κολλητικὸς, something that has the Virtue of gluing together.

COLLIQUATION, in Pharmacy, the Action of melting together two, or more solid Substances; or rendring 'em liquid by Fusion, or Dissolution; as Wax, Mucilages, &c. by Heat; Gums, &c. by Moisture. See FUSION, DISSOLUTION, &c.

COLLIQUATION is also us'd to express such a Temperament, and Disposition of the Animal Fluids, as proceeds from a too lax Compages; whereby they flow off thro' the several Glands, and particularly thro' those of the Skin, faster than they ought; which occasions Fluxes of many Kinds, but mostly, profuse greasy, clammy Sweats.

If this *Colliquation* continue, it generally terminates in an Hectic Fever, and is usually a Concomitant of one. See HECTIC.

The curative Intention in this Case, is the giving a better Consistence to the Juices by Balsamicks and Agglutinants; and the hardening of the Solids by Subastringents. Hence,

COLLIQUATIVE *Fever*, is a Fever attended with a Diarrhæa, or profuse Sweats, from too loose a Contexture of the Fluids. See COLLIQUATION; see also FEVER.

COLLISEUM, or COLISEUM, in the antient Architecture, an oval Amphitheater, built at *Rome* by *Vespasian*, in the Place where stood the Pond of *Nero*'s gilded House.

In this were seen Statues, representing all the Provinces of the Empire; in the middle whereof stood that of *Rome*, holding a golden Apple in her Hand. The same Term, *Colliseum*, is also given to another Amphitheatre of the Emperor *Severus*.

In these *Collisea* were represented Games, and Combats of Men and wild Beasts: There is now little remaining of either of them; Time and War having reduc'd 'em to Ruins. See AMPHITHEATRE.

The Word is form'd from *Colosseum*, on account of the *Colossus* of *Nero*, that stood near it: or, according to *Nardini*, from the Italian *Coliseo*.

COLLISION, the Friction, or Percussion of two Bodies moving violently with different Directions, and dashing against each other.

For *the Laws of the Collision of Bodies*, see PERCUSSION.

COLLUSION, a secret Understanding between two Parties, who plead, or proceed fraudulently against each other, to the prejudice of a third.

In the Canon Law, *Collusion*, in Matters of Benefices, vacates the Benefice; and incapacitates the Person from holding any Benefice at all.

COLLUTHIANS, a Religious Sect, who arose about the Beginning of the IVth Century; on occasion of the Mildness and Indulgence shewn to *Arius*, by *Alexander* Patriarch of *Alexandria*.

Several People being scandaliz'd at so much Condescension; and among the rest *Colluthus*, a Priest of the same City; he hence took a Pretence for holding separate Assemblies, and by degrees proceeded to the Ordination of Priests; as if he had been a Bishop: pretending a Necessity for this Authority, in order to oppose *Arius*.

To his Schism he added Heresy; teaching, that God did not create the Wicked; that he was not Author of the Evils that befal Men, &c.

He was condemn'd in a Council held at *Alexandria* by *Osius*, in the Year 335.

COLLYRIDIANS, antient Hereticks, denominated from a little Cake, call'd by the Greeks *Collyra*, which they offer'd to the Virgin *Mary*.

This Sect, it seems, consisted chiefly of *Arabian* Women, who, out of an Extravagance of Devotion to the Virgin, met on a certain Day in the Year, to celebrate a solemn Feast, and to render Divine Honours to *Mary* as to a Goddess; eating the Cake which they offer'd in her Name. St. *Epiphanius*, who relates the History of this superstitious Ceremony, laughs at it.

COLLYRIUM, in Medicine, an external Remedy, particularly appropriated to Diseases of the Eyes. See EYE.

There are two Kinds of *Collyriums*; the one *liquid*, the other *dry*.

Liquid Collyriums are compos'd of Ophthalmic Pouders, or Waters; as Rose-Water, Plantain-Water, that of Fennel, Eyebright, &c. wherein they dissolve Tutty, White Vitriol, or some other proper Pouder.

The *Dry*, are Troches of Rhasis, Sugar-candy, Iris, Tutty prepar'd, &c. blown into the Eye with a little Pipe.

The same Name is also given to Unguents used for the same Purpose; as Unguent of Tutty, and several others.

Lastly, the Name is given, tho improperly, to some liquid Medicines used against Venereal Ulcers.

The Word *Collyrium* comes from the *Greek* κολλύριον; and that, according to *Martinius*, from κολλᾶν τὸν ῥῶν; because it glues up, and prevents Defluxions.

COLON, in Grammar, a Point, or Character form'd thus [:] ſerving to mark a Pauſe, and to divide the Members of a Period. See POINTING; ſee alſo PERIOD, and COMMA.

Grammarians generally aſſign the Uſe of a *Colon* to be to mark the Middle of a Period; or to conclude a Senſe leſs perfect than the Dot, or Period: But, *a Senſe leſs perfect than the Period*, is an Expreſſion infinitely vague and indeterminate. See PERIOD.

Others ſay, a *Colon* is to be uſed when the Senſe is perfect, but the Sentence not concluded: but neither is this over clear and expreſs. Add to this, that in Practice our beſt Writers confound the *Colon* with the Semicolon.

F. *Buffier*, with his uſual accuracy, attempts to fix the Uſe of the *Colon*; but does not much diſtinguiſh it from the Semicolon: he preſcribes the uſe of either, indifferently; and calls 'em by a common Name, *Intermediate Pointings*; as being Mediums between the Comma and Full-point, or Period. Their Uſe, according to this Author, is to diſtinguiſh the ſupernumerary Members of a Period.

By *ſupernumerary Members*, are meant, ſuch as the precedent ones don't raiſe any Expectation of; *i. e.* ſuch Parts, as have indeed a Dependence on what goes before, even tho what goes before has a compleat Senſe, independent hereon: v. g. *The Auguſtan Age was ſo eminent for good Poets, that they have ſerv'd as Models to all others: yet did it not yield any good Tragic Poets.* Where the ſupernumerary Member, and the Uſe of the *Colon* are obvious.

The moſt obvious and ſenſible Uſe of the *Colon*, he adds, is when the ſupernumerary Member is diſtinguiſh'd by ſome Conjunctions; as notwithſtanding, however, but, except that, unleſs, inaſmuch as, yet, ſince, the rather as, provided that, *&c.*

Some, indeed, uſe the *Colon* in the Middle of long Periods, without any regard to ſupernumerary Members: which Cuſtom was probably introduc'd, to mark that the Breath is here to be taken almoſt as much as in a common Period, in the Place where the ſupernumerary Period commences. But this, at beſt, is arbitrary; and the intermediate Pointings may always be omitted in a Period, if there be no ſupernumerary Member; *i. e.* if there be no ſubſequent Member, but what is expected from the precedent.

As to the Occaſions where the *Colon* is to be uſed, rather than the Semicolon, there is nothing preciſe to be ſaid of it; except that the *Colon* ſhews the ſupernumerary Member more detach'd, and ſets it at a greater diſtance from the reſt; and therefore marks a longer pauſe than the Semicolon.

Accordingly, it ſeems preferable to the Semicolon before Conjunctions Adverſative, Reſtrictive, Conditional, *&c.* as, nevertheleſs, but, excepting that, however, otherwiſe, provided that. Again, where the ſupernumerary Phraſes not only ſuppoſe the precedent, but depend on 'em for their Regimen; and are, as it were, new Parts thereof: there the Semicolon ſeems preferable to the *Colon*. v. g. *You are regardleſs of the Goodneſs of God, who firſt choſe you; a God who is only jealous of your Heart for your own Happineſs; a God who could be equally glorious in deſtroying you by his Juſtice, as in ſaving you by his Mercy.* Or thus: *The Diſcourſe conſiſted of two Parts; in the firſt was ſhewn the Neceſſity of fighting; in the ſecond, the Advantages that wou'd redound from it.*

But this Difference, it muſt be own'd, has a Dependence on ſomething that influences all the Points, and ſways the whole Doctrine of Punctuation; *viz.* the length, or ſhortneſs of the Members and Periods: For when the Phraſes are long, we point higher than when ſhort.

A late Author, in a very ingenious little Diſcourſe, *de Ratione Interpungendi*, marks the Office of the *Colon*, and where in it differs from the Semicolon, *&c.* much more preciſely: A *Colon*, on his Principles, ſerves to diſtinguiſh thoſe conjunct Members of a Sentence, which are capable of being divided into other Members; whereof one, at leaſt, is conjunct. See SENTENCE.

Thus, in the Sentence, *As we cannot diſcern the Shadow moving along the Dial-plate, So the Advances we make in Knowledge are only perceiv'd by the Diſtance gone over*; the two Members being both ſimple, are only ſeparated by a Comma: In this, *As we perceive the Shadow to have moved, but did not perceive it moving; So our Advances in Underſtanding, in that they conſiſt of ſuch minute Steps, are only perceivable by the Diſtance*; the Sentence being divided into two equal Parts, and thoſe conjunct ones, ſince they include others; we ſeparate the former by a Semicolon, and the latter by Commas: But in this, *As we perceive the Shadow to have moved along the Dial, but did not perceive it moving; and it appears the Graſs has grown, tho no body ever ſaw it grow: So the Advances we make in Knowledge, as they conſiſt of ſuch minute Steps, are only perceivable by the Diſtance.* The Advancement in Knowledge is compar'd to the Motion of a Shadow, and the Growth of Graſs; which Compariſon divides the Sentence into two principal Parts: But ſince what is ſaid of the Movement of the Shadow, and likewiſe of the Growth of Graſs, contains two ſimple Members, they are to be ſeparated by a Semicolon; conſequently, a higher Pointing is requir'd to ſeparate 'em from the other Part of the Sentence, which they are oppoſed to: And this is a *Colon*. See PUNCTUATION.

COLON, in Anatomy, is the ſecond of the thick Inteſtines. See INTESTINE.

The *Colon* is placed between the *Cæcum* and *Rectum*; and is wider than either of them: In length it is eight or nine Hands. It begins where the *Ilion* ends, *viz.* in the Cavity of the *Os Ilium*, on the right Side; whence, aſcending by the Kidney on the ſame ſide, it paſſes under the concave Side of the Liver, to which it is ſometimes ty'd, as likewiſe to the Gall-Bladder, which tinges it yellow in that place: Then it runs under the bottom of the Stomach to the Spleen in the left Side, to which it is alſo knit; from thence it turns down to the left Kidney; and thence paſſing in form of an S, it ends at the upper Part of the *Os Sacrum* in the *Rectum*.

At the Beginning of this Gut, there is a Valve form'd by the Production of the inmoſt Coat of the Inteſtines in this place; which hinders the Excrements, when once fallen into the *Colon*, from returning again to the *Ilium*.

It has a ſtrong Ligament, which running along its upper Side, from the *Ilium* to the *Rectum*, ſtrengthens it againſt the Weight of the Excrements, and draws it together into Cells; which, with the *Valvulæ Conniventes*, retard the Paſſages of the Excrements, that we may not be continually oblig'd to be going to Stool. See EXCREMENTS.

The fleſhy Fibres of its ſecond Coat are greater and ſtronger than thoſe of the other Inteſtines; becauſe a greater Strength is requiſite to cauſe the Excrements to aſcend.

The chief Deſign of the *Colon*'s ſurrounding the Abdomen, and, with the *Rectum*, touching all the Parts contain'd in it, ſeems to be, that by immediate Fomentation with Clyſters, they might be eas'd of their Maladies. See CLYSTER.

Some derive the Word from κωλύειν, *to retard*; in regard 'tis in the Folds of this Inteſtine that the Excrements are ſtopp'd and form'd. Others fetch it from κοῖλον, *hollow*; on account of its Capacity: Others again from κολάζεσθαι, *to be tormented*; in regard of the grievous Pain it frequently undergoes.

'Tis from this Part that the Colic takes its Name. See COLIC.

COLONEL, an Officer in the Army, who has the Command of a Regiment, either of Horſe, Foot, or Dragoons. See REGIMENT.

In the *French* Army, *Colonel* is confin'd to the Infantry and Dragoons: the commanding Officer of a Regiment of Horſe, they uſually call *Meſter de Camp*.

Skinner derives the Word from *Colony*; being of Opinion, the Chiefs of Colonies might give their Name to the Chief of Forces.

COLONEL *Lieutenant*, is he who commands a Regiment of Guards, whereof the King, Prince, or other Perſon of the firſt Eminence is *Colonel*. See GUARDS.

Theſe *Colonels Lieutenants* have always a *Colonel*'s Commiſſion, and are uſually General Officers.

Lieutenant COLONEL, is the ſecond Officer in the Regiment; who is at the Head of the Captains, and commands in the abſence of the *Colonel*. See LIEUTENANT.

Lieutenant Colonel of Horſe, or Dragoons, is the firſt Captain of the Regiment. See CAPTAIN.

COLONNADE, a Periſtyle, of a circular Figure; or a Series of Columns, diſpos'd in a Circle, and inſulated within-ſide. See PERISTYLE.

Such is that of the little Park at *Verſailles*, which conſiſts of 32 *Ionic* Columns; all of ſolid Marble, and without Incruſtation.

A *Polyſtyle* COLONNADE, is that whoſe number of Columns is too great to be taken in by the Eye at a ſingle View. Such is the *Colonnade* of the Palace of St. *Peter* at *Rome*; which conſiſts of 284 Columns of the *Doric* Order, each above four Foot and an half Diameter; all in *Tiburtine* Marble.

COLONY, a *Plantation*, or Company of People, of all Sexes and Conditions, tranſported into a remote Province, in order to cultivate and inhabit it. See PLANTATION.

We may diſtinguiſh three Kinds of *Colonies*: The firſt ſerves to eaſe, or diſcharge the Inhabitants of a Country; where the People are become too numerous, ſo that they cannot any longer conveniently ſubſiſt.

The ſecond are thoſe eſtabliſh'd by victorious Princes and People, in the middle of vanquiſh'd Nations, to keep 'em in awe and obedience.

The third may be call'd *Colonies of Commerce*; becauſe, in effect, 'tis Trade is the ſole Occaſion and Object thereof.

'Twas by means of the firſt kind of *Colonies*, that ſome Ages after the Deluge, the Eaſt, firſt, and ſucceſſively all the other Parts of the Earth became inhabited: And without mentioning any thing of the *Phenician* and *Grecian Colonies*, ſo famous in antient Hiſtory, 'tis notorious that it was for the Eſtabliſhment of ſuch *Colonies*, that during the Declenſion of the Empire, thoſe Torrents of barbarous Nations, iſſuing, for the generality, out of the North, overrun the

Gauls, *Italy*, and the other Southern Parts of *Europe*; and after several bloody Battels, divided it with the antient Inhabitants.

For the second kind of *Colonies*, the *Romans* us'd 'em more than any other People; and that to secure the Conquests they had made from the West to the East. Every one knows how many Cities in *Gaul*, *Germany*, *Spain*, and even *England*, value themselves on their having been of the Number of *Roman Colonies*.

Lastly, the *Colonies of Commerce*, are those establish'd by the *English*, *French*, *Spaniards*, *Portuguese*, and other Nations within these two last Centuries, and which they continue still to establish, in several Parts of *Asia*, *Africa*, and *America*; either to keep up a regular Commerce with the Natives, or to cultivate the Grounds, by planting Sugar-Canes, Indigo, Tobacco, and other Commodities. See COMMERCE.

The principal of this Kind of *Colonies*, are in the one and the other *America*, Northern and Southern; particularly *Peru*, *Mexico*, *Canada*, *Virginia*, *New-England*, *Carolina*, *la Louisiane*, *l'Acadia*, *Hudson's Bay*, the *Antilles Islands*, *Jamaica*, *Domingo*, and the other Islands.

In *Africa*, *Madagascar*, *Cape of Good Hope*, *Cape Verd*, and its Islands, and all those vast Coasts, extended thence as far as to the Red Sea.

Lastly, in *Asia*, the famous *Batavia* of the *Dutch*; *Goa*, *Diu* of the *Portuguese*; and some other less considerable Places of the *English*, *French*, and *Danes*.

M. *Vaillant* has fill'd a Volume in Folio with Medals struck by the several *Colonies*, in honour of the Emperors who founded 'em. The ordinary Symbol they engrav'd on their Medals, was, either an Eagle; as when the Veteran Legions were distributed in the *Colonies*: or a Labourer, holding a Plough drawn by a pair of Oxen; as when the *Colony* consisted of ordinary Inhabitants. On all the Medals are seen the Names of the Decemvirs; who held the same Rank, and had the same Authority there, as the Consuls had at *Rome*. See DECEMVIR.

There were two Kinds of *Colonies* among the *Romans*; those sent by the Senate; and the Military ones, consisting of old Soldiers, broken and disabled with the Fatigues of War, who were thus provided with Lands, as the Reward of their Services. See BENEFICE.

The *Colonies* sent by the Senate, were either *Roman*, or *Latin*; *i. e.* compos'd either of *Roman* Citizens, or *Latins*.

The *Colonies* of *Roman* Citizens had the Right of Suffrages; but had no part in the Offices or Honours of the Republick. The Inhabitants of *Latin Colonies*, had no Right of Suffrages without an express Permission. See CITIZEN, &c.

According to *Ulpian*, (*lib. de Cens.*) there were other *Colonies*, which had little more than the Name; only enjoying what they call'd *Jus Italicum*; *i. e.* they were free from the Tributes and Taxes paid by the Provinces: Such were the *Colonies* of *Tyre*, *Berytus*, *Heliopolis*, *Palmyra*, &c.

Originally, the Word *Colony* signify'd no more than a Farm; *i. e.* the Habitation of a Peasant, with the Quantity of Land sufficient for the Support of his Family; *Quantum Colonus unus arare poterat.*

COLOPHONY, a kind of Gum; being only a finer Turpentine, boil'd in Water till it be reduc'd into a solid Consistence. See TURPENTINE.

The chief Use of this Drug is in the Cure of Venereal Ailings, Seminal Weaknesses, the Whites in Women, &c. The Apothecaries make it into Pills, which they roll in Liquorice-Powder, or cover over with Gold-Leaf, and call them *Turpentine Pills*.

It is also used by Musicians, to rub the Hairs of their Bow withal; the Effect whereof is, that the Gum cleaning the Hairs, and communicating to 'em a tenacious Quality, prevents their sliding too easily over the Strings; and promotes that trembling which forms the Sound.

COLOPHONY is also an oleaginous Substance, of a yellowish Colour, dry, and friable, compos'd of the Remains of Resins of Fir, and Fir-Apples, condens'd by Coction, and harden'd by Cold.

To be good, it must be shining and odoriferous; and when thrown on the Fire, render a Smoke like that of Incense.

Pliny says, *Colophony* took its Name from *Colophon*, a City of *Ionia*, whence it was first brought.

'Tis now frequently called *Spanish Wax*, or *Grecian Resin*; as it is brought from the one or the other of those Countries. It is found to warm, dry, soften, and agglutinate, and usually enters the Composition of Plaisters and Unguents.

COLOPHONY is also used for the Remains of Turpentine distilled; or the gross Part resting at the bottom of the Vessel. See DISTILLATION.

COLOQUINTIDA, or COLOCYNTHIS, usually call'd *Bitter Apple*; the Fruit of a Plant of the same Name, brought from the *Levant*; about the bigness of a large Orange.

Its Colour is that of a golden brown: Its inside is full of Kernels, which are to be taken out before the *Colocinthis* be us'd. Both the Seed and Pulp are intolerably Bitter.

Coloquintida is of considerable use in Medicine, but mostly in officinal Compositions; the Violence of its Operation rendring it unsafe to be given inwardly in extemporaneous Prescriptions, except with great Caution.

It enters, as an Ingredient, in the *Confectio Hamec.* and most purging Pills; and in such Cases as require purging, is attended with great success. It is one of the most violent purgative Drugs known; insomuch that it excoriates the Passages to that degree, as sometimes to bring away Blood, and induce a Superpurgation. Sometimes it is taken boil'd in Water, or Small Beer, in Obstruction of the Menses; which, in strong Constitutions, is often attended with Success. Some Women have got a trick of taking it, in the same manner, in the beginning of Pregnancy, to procure Abortion; which it often effects by the Violence of its Operation.

The Pouder of *Coloquintida* is sometimes used externally, with Aloes, &c. in Unguents, Emplaisters, &c. with remarkable Success against Worms; and some, for the same purpose, recommend the Pulp, given Clyster-wise. In the Iliac Passion, Clysters of *Coloquintida* have been found of service, after most other Medicines have fail'd.

Troches made of *Colocynth*, are called *Troches of Albandal*: They are prepared by cutting the *Coloquintida* very small, and reducing it to a fine Pouder in a Mortar, rubb'd with Oil of sweet Almonds; adding Gum Tragacanth, and Mastic afterwards. See TROCHES.

The Word comes from the *Greek* κολοκύνθη, which was given it, in regard it κοιλίαν κινεῖ, *agitates the Belly*.

COLORBASIANS, a Branch of *Gnosticks*; so called from *Colorbasus*, who improv'd on the Visions of the *Gnosticks* that had preceeded 'em. St. *Epiphanius* enumerates and confutes their Errors. See GNOSTICS.

COLORISATION, or COLORATION, in Pharmacy, a Term applied to the several Changes of Colour which Bodies undergo in the various Operations of Nature, or Art; as by Fermentations, Lotions, Coctions, or Calcinations, &c. See COLOUR, and COLOURING.

COLOSSAL *Column*. See COLUMN.

COLOSSUS, a Statue of a prodigious Size, representing a Giant. See STATUE.

The most eminent of this kind was the *Colossus of Rhodes*, a Statue of *Apollo*, so high, that Ships pass'd with full Sails betwixt its Legs. It was the Workmanship of *Chares*, a Disciple of *Lysippus*; who spent twelve Years in making it: 'Twas at length overthrown by an Earthquake, after having stood 1360 Years. Its Height was fixscore and six Foot: There were few People could fathom its Thumb, &c.

Some Criticks observe, that the *Colossus* of *Rhodes* gave its own Name to the People among whom it stood; and that many, at least among the antient Poets, call the *Rhodians*, *Colossians*: Hence they advance an Opinion, that the *Colossians* in Scripture, to whom St. *Paul* directs his Epistle, are, in reality, the Inhabitants of *Rhodes*. Of this Sentiment are *Suidas*, *Calepin*, *Munster*, &c.

When the *Saracens* became possess'd of the Island, the Statue was found laid along the ground: They sold it to a *Jew*, who loaded 900 Camels with the Brass.

The Basis that supported it was of a triangular Figure, its Extremities were sustain'd with 60 Pillars of Marble. There was a winding Stair-case to go up to the top of it; from whence one might discover *Syria*, and the Ships that went into *Egypt*, in a great Looking-Glass, that was hung about the Neck of the Statue.

Among the Antiquities of *Rome*, there are seven famous *Colossus*'s: two of *Jupiter*, as many of *Apollo*; one of *Nero*, one of *Domitian*, and one of the Sun.

The Term *Colossus* takes its rise παρὰ τὸ κολοῦειν τὰ ὄσσα, *quod minuat & retundat oculos*.

COLOSTRUM, or COLOSTRA, in Medicine, Milk coagulated in Womens Breasts. See MILK.

The Name is also given to a Disease which this coagulated Milk occasions.

COLOUR, in Philosophy, a Property inherent in Light, whereby, according to the different Sizes, or Magnitudes of its Parts, it excites different Vibrations in the Fibres of the Optick Nerve; which propagated to the *Sensorium*, affects the Mind with different Sensations.

Or, *Colour* may be defin'd a Sensation of the Soul, excited by the Application of Light to the *Retina* of the Eye; and different, as that Light differs in the degree of its Refrangibility, and the Magnitude of its component Parts. See SENSATION.

In the former View, therefore, Light is the Subject of *Colour*; in the latter it is the Agent. *See its Properties under the Article* LIGHT.

Various are the Opinions of antient and modern Authors, and of the several Sects of Philosophers, with regard to the Nature and Origin of the Phænomenon *Colour*: The most popular

popular Opinion, is that of the *Aristotelians*; who maintain *Colour* to be a Quality residing in the *colour'd* Body; and to exist, independently of Light. See QUALITY.

The *Cartesians* come nearer the Matter: They own, that as the *colour'd* Body is not immediately applied to the Organ, to occasion the Sensation, and that as no Body can affect the Sense but by immediate contact; the *colour'd* Body does not excite the Sensation of it self, or contribute any thing to it, otherwise than by moving some interpos'd Medium, and by that the Organ of Sight.

They add, that, as we find that Bodies don't affect the Sense in the dark, Light only occasions the Sense of *Colour*, by moving the Organ; and that *colour'd* Bodies are no further concern'd than as they reflect the Light with a certain Modification: the differences in their *Colours* arising from a difference in the Texture of their Parts, whereby they are dispos'd to reflect the Light with this or that Modification.

But 'tis to Sir *Isaac Newton* we are owing for a solid and consistent Theory of *Colours*; built on sure Experiments, and solving all the Phænomena thereof: His Doctrine is as follows.

'Tis found by Experience, that Rays, or Beams of Light, are compos'd of Particles very heterogeneous, or dissimilar to each other: *i. e.* some of them, as 'tis highly probable, are larger, and others less. For a Ray of Light, as F E, (Tab. *Optics*, Fig. 5.) being receiv'd on a refracting Surface, as A D, in a dark Place, is not wholly refracted to L; but split, as it were, and diffused into several little Rays, some whereof are refracted to L, and others to the other intermediate Points between L and G; *i. e.* those Particles of the Light which are the most minute, are of all others the most easily and most considerably diverted, by the Action of the refracting Surface, out of their rectilinear Course towards L: and the rest, as each exceeds another in Magnitude, so is it with more difficulty, and less considerably turn'd out of its right Line to the Points between L and G. See REFRANGIBILITY.

Now, each Ray of Light, as it differs from another in its degree of Refrangibility, so does it differ from it in *Colour*: this is warranted by numerous Experiments. Those Particles, *v. g.* which are most refracted, are found to constitute a Ray of a violet *Colour*; *i. e.* in all probability, the most minute Particles of Light, thus, separately impell'd, excite the shortest Vibration in the *Retina*; which are thence propagated by the solid Fibres of the Optic Nerves into the Brain, there to excite the Sensation of violet *Colour*; as being the most dusky and languid of all *Colours*. See VIOLET.

Again, those Particles which are the least refracted, constitute a *Radiolus*, or Ray of a red Colour; *i. e.* the largest Particles of Light excite the longest Vibrations in the *Retina*; so as to excite the Sensation of red *Colour*, the brightest and most vivid of all others. See RED.

The other Particles being in like manner separated, according to their respective Magnitudes, into little Rays; excite the intermediate Vibrations, and thus occasion the Sensations of the intermediate *Colours*; much in the same manner as the several Vibrations of the Air, according to their respective Magnitudes, excite the Sensations of different Sounds. See VIBRATION.

To this it may be added, that not only the more distinct and notable *Colours* of red, yellow, blue, *&c.* have thus their rise from the different Magnitude and Refrangibility of the Rays; but also the intermediate Degrees or Teints of the same *Colour*; as of yellow up to green, of red down to yellow, *&c.*

Further, the *Colours* of these little Rays, not being any adventitious Modifications thereof, but connate, primitive, and necessary Properties; as consisting, in all probability, in the Magnitudes of their Parts, must be perpetual and immutable; *i. e.* cannot be chang'd by any future Refraction or Reflection, or any Modification whatsoever.

This is confirm'd by abundance of Experiments; all endeavours having been us'd, after separating a *colour'd* Ray from those of other Kinds, to change it into some other *Colour* by repeated Refractions, but to no effect. Apparent Transmutations of *Colours*, indeed, may be effected; *viz.* where there is an Assemblage, or Mixture of Rays of different Kinds; the component *Colours* never appearing in their natural Hue in such Mixtures, but always allay'd and temper'd with each other: whence results a middling Kind of *Colour*, which, by Refraction, may be separated into the component ones: and those, after Separation, being remix'd, return to their former *Colour*.

Hence, the Transmutations of *Colours*, by mixing those of different Kinds, are not real; but mere Appearances or Deceptions of the Sight: For the Rays being again severed, exhibit the same *Colours* as at first. Thus, blue and yellow Pouders, well mix'd, appear to the naked Eye green; yet, without having pass'd any Alteration, when view'd thro' a Microscope, the blue and yellow Particles still appear distinct.

Hence there arise two Kinds of *Colours*; the one *original*, and *simple*, produced by homogeneal Light; or by Rays that have the same degree of Refrangibility, and the same Magnitude of their Parts: Such are red, yellow, green, blue, a violet purple, orange, and indigo; with all their intermediate Teints and Gradations.

The other Kind of *Colour* is *secundary*, or *heterogeneous*; compounded of the primary ones, or of a Mixture of Rays differently refrangible, *&c.*

There may also be secondary *Colours* produced by Composition, like the primary ones, or those consisting of homogeneal Light, as to the Species or Appearance of the *Colour*; but not as to the Permanency, or Immutability thereof. Thus, yellow and blue make green; red and yellow, orange; orange and yellowish green, yellow: And in the general, if any two *Colours* be mix'd, which in the Series of those generated by the Prism, are not too far apart, from their Mixture results that *Colour*, which in the said Series is found in the mid-way between 'em: but those situated at too great a distance do not so.

Indeed, the more any *Colour* is compounded, the less perfect and vivid it is: by too much Composition they may be diluted and weaken'd till they cease. By Composition there may likewise be produced *Colours*, not like any of those of homogeneal Light.

The most extraordinary Composition is that of *Whiteness*; for to this, all the primary *Colours* abovemention'd are requir'd; and those to be mix'd in a certain degree. Hence it is that White is the ordinary *Colour* of Light; Light being nothing else but a confused Assemblage of Rays of all *Colours*. See WHITENESS.

If the Rays of different *Colours* do thus begin to be separated by one Refraction of one single Surface; that Separation is much promoted, so as even to become sensible to the Eye by a double Refraction. This is observ'd in the two Surfaces of any Glass; provided those Surfaces be not parallel: but, of all others, it is most sensible in the two Faces of a triangular Prism; the Phænomena whereof, as they are the Touchstone of all Theories of *Colours*; and as they contain the Foundation of that here deliver'd, we shall lay down as follows.

1. The Rays of the Sun, transmitted thro' a triangular Prism, exhibit an Image of various *Colours*, (the chief whereof are red, yellow, green, blue, and violet) on the opposite Wall.

The Reason is, that the differently *colour'd* Rays are separated by Refraction: For the blue Rays, *v. g.* mark'd with the dotted Line, (Plate *Optics*, Fig. 6.) which begin to be separated from the rest by the first Refraction in *d d*, of the Side *c a* of the Prism *a b c*, (as also in the first Surface of the Globe of Water *a b c*, Fig. 7.) are still further separated in the other Side of the Prism *b c*, (as also in their egress out of the Globe *a b c*) by a second Refraction in *c e*, in the same Direction as the former: whereas, on the contrary, in the plane Glass *a b c f*, Fig. 9. (as also in the Prism *g l o*, Fig. 8. now placed in another Situation) those blue Rays which begin to be separated from the rest in the first Surface, in *d d*, by a second Refraction, the contrary way, pass out parallel, *i. e.* remix'd with all the *Colours* of the other Rays.

2. That Image is not round, but oblong; its length, when the Prism is an Angle of 60 or 65 Degrees, being five times its breadth.

The Reason is, that some of the Rays are refracted more than others; and by that means, exhibit several Images of the Sun, extended lengthwise, instead of one.

3. Those Rays which exhibit yellow, are turn'd further from the rectilinear Course, than those which exhibit red; those which exhibit green, than those which exhibit yellow: but, of all others, those which exhibit violet the most: Accordingly, if the Prism thro' which the Light is transmitted be turn'd about its Axis, so as the red, yellow, green, *&c.* Rays be projected, in order, thro' a narrow Aperture into another Prism, placed at the Distance of about 12 Feet; the yellow, green, *&c.* Rays, tho falling thro' the same Aperture, in the same manner, and on the same Point of the second Prism, will not be refracted to the same Place as the red, but to a Point at some distance from it; on that side to which the Rotation is made.

This is what Sir *I. Newton* calls the *Experimentum Crucis*: being that which led him out of the Difficulties into which the first Phænomenon, *&c.* had thrown him; and plainly shew'd a different Degree of Refrangibility, and a different *Colour* corresponding thereto in the Rays of Light: and that yellow Rays, *v. g.* are more refracted than red ones, green ones more than yellow ones; and blue and violet ones most of all.

4. The *Colours* of *colour'd* Rays, well separated by the Prism, are not at all chang'd or destroy'd by passing an illuminated Medium, nor by their mutual Decussation; their bordering on a deep Shadow; nor their being reflected from

any

any natural Body, or refracted thro' any one, in a Place howsoever obscure.

The reason is, that *Colours* are not Modifications arising from Refraction, or Reflection, but immutable Properties; and such as belong to the Nature of the Rays.

5. An Assemblage of all the Kinds of *colour'd* Rays, collected either by several Prisms, by a convex Lens, or a concave Mirror, or in any other manner, form what we call *Whiteness*; yet each of these, after Decussation, becoming separated, again exhibits its proper *Colour*: For, as the Ray was white before its Parts were separated by Refraction; so, the Parts being remix'd, it becomes white again: And *colour'd* Rays, when they meet together, don't destroy one another, but are only interspers'd.

Hence, a red, green, yellow, blue, and violet *Colour*, being mix'd in a certain Proportion, appear whitish; *i. e.* are of such a *Colour* as arises from white and black mix'd together: and if there were not some Rays absorb'd and lost, wou'd be plainly white. In like manner, if a Paper cut into a Circle, be stain'd with each of those *Colours*, separately, and in a certain Proportion; then swiftly turn'd round its Centre, so as the Species of *Colours* be mix'd together in the Eye, by the briskness of the Motion; the several *Colours* will disappear, and the whole Paper appear of one continued *Colour*; which will be a Mean between white and black.

6. If the Rays of the Sun fall very obliquely on the inner Surface of a Prism, those that are reflected will be violet; those transmitted, red.

For, the Rays were *colour'd* before any Separation; and by how much they are the more refrangible, by so much they are the more easily reflected; and by that means are separated.

7. If two hollow Prisms, the one fill'd with a blue Fluid, the other with a red one, be join'd together, they will be opake; tho each, apart, be transparent.

For, the one transmitting none but blue Rays, and the other none but red ones; the two together will transmit none at all.

8. All natural Bodies, especially white ones, view'd thro' a Prism held to the Eye, appear fimbriated, or border'd, on one side with red and yellow, and on the other with blue and violet.

For, those *Fimbriæ* are the Extremes of entire Images, which the Rays of any kind, as they are more or less refracted, would exhibit, nearer, or at a greater distance from the real Place of the Object.

9. If two Prisms be so placed, as that the red of the one, and the purple of the other meet together, in a Paper fit for the purpose, incompass'd with darkness; the Image will appear pale: and if view'd thro' a third Prism, held to the Eye at a proper distance, it will appear double; the one red, the other purple.

In like manner, if two Pouders, the one perfectly red, the other blue, be mix'd; any little Body cover'd pretty deeply with this Mixture, and view'd thro' a Prism held to the Eye, will exhibit a double Image, the one red, and the other blue: in regard, the red and purple, or blue Rays, are separated by their unequal Refraction.

10. If the Rays transmitted thro' a convex Lens, be receiv'd on a Paper ere they meet in a *Focus*; the Confines or Boundary of Light and Shadow will appear ting'd with a red *Colour*: but if they be receiv'd beyond the *Focus*, with a blue one.

Because, in the first Case, the red Rays, being somewhat more refracted, are the higher; but, in the second, after Decussation in the *Focus*, the blue ones.

Lastly, if the Rays about to pass thro' either side of the *Pupilla*, be intercepted by the Interposition of any opake Body near the Eye; the Extremes of Bodies, placed as if view'd thro' a Prism, will appear ting'd with *Colours*; tho those not very vivid.

For then, the Rays transmitted thro' the rest of the Pupil, will be separated by Refraction into *Colours*; without being diluted with the admixture of the intercepted Rays, which would be refracted in a different manner.

And hence it is, that a Body view'd thro' a Paper pierc'd with two Holes, appears double, and also tinged with *Colours*.

Of the Colours *of thin Plates.* As Rays of different *Colours* are separated by the Refraction of Prisms, and other thick Bodies; so are they separated, tho in a different manner, in the thin *Lamellæ*, or Plates of any pellucid Matter, *v. g.* the Bubbles rais'd in Water, thicken'd by Soap, &c. For all *Lamellæ*, under a determinate thickness, transmit Rays of all *Colours*, without reflecting any at all: but, as they increase in thickness, in arithmetical Proportion, they begin to reflect, first blue Rays; then, in order, green, yellow and red, all pure: then, again, blue, green, yellow, red, more and more mix'd and diluted; till, at length, arriving at a certain thickness, they reflect Rays of all *Colours* perfectly intermix'd, *viz.* white.

But, in whatsoever Part a slender *Lamella* reflects any one *Colour*, *v. g.* blue; in that Part it always transmits the opposite *Colour*, *v. g.* red, or yellow.

'Tis found, by Experiment, that the difference of *Colour* of a Plate does not depend on the Medium that incompasses it; but the degree of Vividness does: *cæteris paribus*, the *Colour* will be more vivid, if the denser Medium be incompass'd with the rarer. A Plate, *cæteris paribus*, reflects more Light as it is thinner; as far as a certain Degree of thinness, beyond which it reflects no Light at all.

In Plates whose thicknesses increase in an arithmetical Proportion of the natural Numbers 1,2,3,4,5, &c. If the first, or thinnest, reflect any homogeneal Ray, the second will transmit it; the third, again, will reflect it: And thus is the same Ray alternately reflected and transmitted; *i. e.* the Plates corresponding to the odd Numbers, 1, 3, 5, 7, &c. will reflect the same Rays that those corresponding to the even ones, 2, 4, 6, 8, &c. transmit.

Hence, an homogeneous *Colour* in a Plate, is said to be of the *first Order*; if the Plate reflect all the Rays of that *Colour*. In a Plate whose thinness is triple the first, it is said to be of the *second Order*: in another, whose thinness is five times that of the first, it is said to be of the *third Order*, &c.

A *Colour* of the first Order is the most vivid of any; and, successively, the Vividness of the *Colour* increases, as the Quantity of the Order increases: The more the Thickness of the Plate is increas'd, the more *Colours* it reflects; and those of more different Orders. In some Plates, the *Colour* will vary as the Position of the Eye varies; in others it is permanent.

Colours *of Natural Bodies.* Bodies only appear of different *Colours*, as their Surfaces are dispos'd to reflect Rays of this or that *Colour* alone; or of this or that *Colour* more abundantly than any other: hence Bodies appear of that *Colour* which arises from the Mixture of the reflected Rays. See Body.

All Natural Bodies consist of very thin, transparent *Lamellæ*; which, if they be so dispos'd, with regard to each other, as that there happen no Reflections or Refractions in their Interstices, those Bodies become pellucid, or transparent: but if their Intervals be so large, and those filled with such Matter; or, so empty, (with regard to the Density of the Parts themselves) as that there happen a Number of Reflections and Refractions within the Body; the Body, in that Case, becomes opake. See Transparency, and Opacity.

The Rays which are not reflected from an opake Body, penetrate into it; and there, suffering innumerable Reflections and Refractions, at length, unite themselves to the Particles of the Body it self.

Hence, an opake Body grows hot the sooner, as it reflects Light less copiously: Whence, we see why a white Body, which reflects almost all the Rays that strike upon it, heats much more slowly than a black one, which reflects scarce any. See Heat, Blackness, &c.

To determine that Constitution of the Surface of Bodies wherein their *Colour* depends; it must be observ'd, that the smallest Corpuscles, or first Particles whereof Surfaces are made up, are most thin and transparent; and separated by a Medium of a different Density from the Particles themselves. In the Surface, then, of every *colour'd* Body, are innumerable smaller thin Plates, corresponding to those of Bubbles: wherefore, what has been observ'd of those, may be understood of these.

Hence we gather, that the *Colour* of a Body depends on the Density and Thickness of the Parts of the Body, between the Pores of the Surface: that the *Colour* is more vivid and homogeneous, as the Parts are thinner; that *cæteris paribus*, the said Parts are the thickest when the Body is red; and the thinnest when violet: That the Parts of Bodies are usually much denser, than the Medium contain'd in their Interstices; but that in the Tails of Peacocks, in some Silks, and generally, in all Bodies whose *Colour* varies according to the Situation of the Eye, it is less: and that the *Colour* of a Body is the less vivid to the Eye, as it has a denser Medium within its Pores.

Now, of the several opake Bodies, those consisting of the thinnest *Lamellæ* are *black*; those consisting either of the thickest *Lamellæ*, or of *Lamellæ* very different from each other in thickness, and on that account fitted to reflect all *Colours*, as the Froth of Water, &c. are *white*: Those, again, consisting of *Lamellæ*, most of which are of some intermediate thickness, are *blue*, *green*, *yellow*, or *red*; inasmuch as they reflect the Rays of that particular *Colour*, much more copiously than that of any other *Colour*; most of which last they either absorb and extinguish, by intercepting them, or else transmit.

Hence it is, that some Liquors, *v. g.* an Infusion of Lignum Nephriticum, appear red, or yellow, if view'd by reflected Light; and blue by transmitted Light: and gold Leaves yellow in the former Circumstances, but green or blue in the latter.

To this may be added, that ſome of the Pouders uſed by Painters, have their *Colour* changed by being very finely ground; which muſt be occaſion'd by the Comminution or Breaking of their ſmall Parts into others ſtill ſmaller; juſt as a *Lamella* has its *Colour* alter'd, by altering its Thickneſs.

In fine, thoſe odd Phænomena ariſing from the Mixture of Liquors of different *Colours*, can no way be better accounted for, than from the various Actions of the ſaline, *&c.* Corpuſcles of one Liquor, with the *colour'd* Corpuſcles of another: if they unite, the Maſs will either ſwell or ſhrink, and thereby its Denſity will be alter'd; if they ferment, the Size of the Particles may be diminiſh'd, and thereby *coloured* Liquors may become tranſparent: If they coagulate, an opake Liquor may be produc'd of two tranſparent ones.

Hence, 'tis eaſy to ſee why a *colour'd* Liquid, in a Glaſs of a conical Figure, placed between the Eye and the Light, appears of a different *Colour* in different Parts of the Veſſel; there being more and more Rays intercepted, as they paſs thro' a longer or a ſhorter Section of the Veſſel: till, at the Baſe, they are all intercepted; and none ſeen but thoſe reflected.

From the various *Colours* of Natural Bodies, Sir *I. Newton* obſerves, the Bigneſs of their component Parts may be eſtimated: For that the Parts of Bodies do properly exhibit the ſame *Colour* with a *Lamella* of equal thickneſs, provided the Denſity in both be the ſame: See BODY, PARTICLE, *&c.*

For the diſtinct Properties, &c. *of the ſeveral* COLOURS. See BLACK, WHITE, BLUE, *&c.* ſee alſo RAINBOW, *&c.*

COLOUR, in Painting, is applied both to the Drugs, and to the Teints produced by thoſe Drugs, variouſly mix'd and applied.

The principal *Colours* uſed by Painters, are *red*, and *white Lead* or *Ceruſſe*; *yellow* and *red Ocres*; ſeveral Kinds of Earth, as *Umber*; *Orpiment*, *black Lead*, *Cinnabar* or *Vermillion*, *Gambouche*, *Lacca*, *blue* and *green Aſhes*, *Indigo*, *Verdegreaſe*, *burnt Ivory*, *Biſtre*, *Lampblack*, *Smalt*, *Ultramarine*, and *Carmine*; *each of which, with the manner of preparing them, their Uſes*, &c. ſee under their reſpective Heads, LEAD, CERUSSE, OCRE, *&c.*

Of theſe *Colours*, ſome are uſed ground in *Oil*, others only in *Freſco*, others in *Water*, and others for *Mignature*. See FRESCO, and MIGNATURE; ſee alſo PAINTING, COLOURING, *&c.*

Dark, and Light COLOURS. Under theſe two Claſſes, the Painters reduce all the *Colours* they uſe: Under *Light Colours* are comprehended *white*, and all thoſe which approach neareſt it; and under *Dark Colours*, *black*, and all thoſe which are obſcure and earthy, as *Umber*, *Biſtre*, &c.

Simple, and Mineral COLOURS, is another Diviſion among the Painters: Under *ſimple Colours*, they range all thoſe us'd by Limners, Illuminers, *&c.* extracted from Vegetables; and which will not bear the Fire: as the yellow made of Saffron, of *French* Berries, *&c.* Lacca, and other Tinctures extracted from Flowers. The reſt are *Mineral*, drawn from Metals, *&c.* and able to bear the Fire: theſe alone are us'd in Enamelling. See ENAMELLING.

Changing and Permanent COLOURS; another Diviſion of *Colours*: By *changeable*, are meant thoſe which depend on the Situation of Objects with regard to the Eye; as that of Taffetas, of a Pidgeon's Neck, *&c.* The laſt, however, being attentively view'd with a Microſcope, each Fibre of the Feathers appears compos'd of ſeveral little Squares, alternately red and green; ſo that they are fix'd *Colours*.

Kircher ſays, that the *changing Colours* obſerv'd in the Wings of Pidgeons, Peacocks, *&c.* ariſe from the Feathers being tranſparent, and of a Figure reſembling a Priſm; and conſequently the Light's being differently refracted from 'em. On the contrary, the fix'd and *permanent Colours*, are not exhibited by Refraction but Reflection.

M. *Mariotte* obſerves, that there are two different Gradations, or Series of *Colours*, from white, to black; the one white, yellow, red, and black; the other white, blue, violet, and black. See PAINTING.

COLOUR, in Dying. There are five ſimple, primary, or Mother-*Colours*, uſed by the Dyers; from the Mixture whereof all the other *Colours* are form'd: Theſe are *blue*, *red*, *yellow*, *brown*, and *black*; each of which ſee under their proper Head, BLUE, RED, *&c.*

Of theſe *Colours*, variouſly mix'd and combin'd, they form the following *Colours*; *panſy*, *blue*, and *red*: from the Mixture of blue and ſcarlet, are form'd *amaranth*, *violet*, and *panſy*: From the ſame Mixture of blue and crimſon-red, are form'd the *colombine* or *dove-colour*, *purple*, *crimſon*, *amaranth*, *panſy*, and *crimſon-violet*.

It may be obſerv'd, that they give the Name *Crimſon*, to all *Colours* made with Cochineal. See CRIMSON, COCHINEAL, *&c.*

Of blue and red Madder, they likewiſe make *purple*, *pepper-colour*, *tan-colour*, and *dry roſe*: The ſame blue, with red half in grain, makes *amaranth*, *tan-colour*, and *dry roſe*. Blue, and half red crimſon, compoſe *amaranth*, *tan-colour*, *dry roſe*, a *brown panſy*, and *ſur-brun*.

Blue and Yellow. Theſe two *Colours*, mix'd together, compoſe a yellow-green, ſpring-green, graſs-green, laurel-green, brown-green, dark-green; as well as ſea-green, parrot-green, and cabbage-green, *&c.* Theſe three laſt *Colours* are to be leſs boil'd than the firſt.

Note, with regard to *green*, there's no Ingredient or Drug in Nature that will dye it; but the Stuffs are dy'd twice, firſt in blue, then yellow.

Blue and Brown. Theſe two *Colours* are never mix'd alone; but with the addition of red, either of Madder or Cochineal, they form ſeveral *Colours*.

Red and Yellow. All the Shades compos'd of theſe two *Colours*, as gold-yellow, aurora, marigold, orange, nacarat, granat-flower, flame-*colour*, &c. are made with yellow, and red of Madder; ſcarlet being leſs proper, as well as too dear.

Red and Brown. Of theſe two *Colours* are form'd cinnamon-*colour*, cheſnut, muſk, bears-hair, and even purple; if the red be that of Madder.

Yellow and Brown. The *Colours* form'd from theſe two are all the Shades of *Feuille-morts*, and Hair-*Colours*.

It may be obſerv'd, that tho we ſay, there are no *Colours*, or Shades, made from ſuch and ſuch Mixtures: 'tis not that none can be made; but only that they are more eaſily form'd from the Mixture of other *Colours*. See DYING.

For the Method of proving the Goodneſs, or Falſeneſs of COLOURS, *or Dyes*; ſee DYE.

COLOUR, in Heraldry. The *Colours* generally uſed in Heraldry, are red, blue, black, green, and purple; which, by the Learned in that Science are called *Gules*, *Azure*, *Sable*, *Vert* or *Sinople*, and *Purpure*. *Tenne*, or tawny, and *Sanguin*, are not ſo common. See each *Colour* under its proper Article GULES, AZURE, VERT, *&c.*

As to yellow and white, call'd *Or* and *Argent*; they are Metals, not *Colours*. See OR, and ARGENT.

Theſe *Colours* and Metals are ſometimes alſo expreſs'd in blazon by the Names of precious Stones; and ſometimes by thoſe of Planets, or Stars. Thus, Or is call'd *Sol*, and *Topaz*; Argent, *Luna*, and *Pearl*; Gules, *Mars*, and *Ruby*; Azure, *Jupiter*, and *Saphir*; Sable, *Saturn*, and *Diamond*; Vert, *Venus*, and *Emerald*; Purpure, *Mercury*, and *Amethiſt*; Tenne, the *Dragon's-Head*, and *Hyacinth*; and *Sanguin*, the *Dragon's-Tail*, and *Sardonix*. See SABLE, SOL, ARGENT, *&c.*

It is a general and fundamental Rule in Blazon, not to place *Colour* upon *Colour*, nor Metal upon Metal. That is, if the Field be of a *Colour*, the Bearing muſt be of a Metal: tho this Rule, on ſome Occaſions, and in ſome Circumſtances, is diſpens'd withal; as in the Diminutions and Differences which diſtinguiſh the younger from the elder Families; and in the Extremities of Animals Tongues, Claws, Horns, *&c.* In which Caſes, *Colour* may be on *Colour*, and Metal on Metal, without falſe Heraldry.

Onomaus is ſaid to have firſt invented the Diſtinction of *Colours*, to diſtinguiſh the *Quadrillæ* of Combatants at the *Circenſian* Games: the green for thoſe who repreſented the Earth; and the blue for thoſe who repreſented the Sea. See FACTION.

Hence, the antient Cavaliers took occaſion to diſtinguiſh themſelves in their Tournaments, by Habits, Plumes, and Ribbands of different *Colours*; which were ordinarily thoſe of their Miſtreſſes, and were the Symbol of ſome Paſſion, or Quality.

Hence alſo the Origin of *Colours* in Liveries. See LIVERY.

COLOURS, in the Military Art, include the Banners, Flags, Enſigns, *&c.* of all Kinds, bore in an Army, a Fleet, or the like. See BANNER, FLAG, STANDARD, *&c.*

COLOURS, are alſo uſed both in the *Latin* and *Greek* Churches, to diſtinguiſh ſeveral Myſteries and Feaſts celebrated therein.

In the *Latin* Church are only regularly admitted five *Colours*, viz. *white*, *red*, *green*, *violet*, and *black*; the *white* for the Myſteries of our Saviour, the Feaſts of the Virgin, thoſe of the Angels, Saints, and Confeſſors; the *red* for the Myſteries and Solemnities of the Holy Sacrament, the Feaſts of the Apoſtles and Martyrs; *green* for the Time between Pentecoſt and Advent, and from Epiphany to Septuageſima; *violet* in Advent, Chriſtmas, in Vigils, Rogations, and in votive Maſſes in time of War: Laſtly, *black* for the Dead, and the Ceremonies thereto belonging. Clothes of Gold and Silver, and Embroideries, ſerv'd indifferently for all Solemnities.

In the *Greek* Church, the uſe of *Colours* is almoſt obliterated, as well as among us: *Red*, among them, was the *Colour* for Chriſtmas and the Dead; as *black* is ſtill in the laſt among us. See MOURNING.

COLOUR, in Law, is a probable, or plauſible Plea; tho in reality falſe at bottom; and only calculated to draw the Trial of the Cauſe from the Jury to the Judge.

Thus, *v. g.* in an Action of Treſpaſs for taking away the Plaintiff's Beaſts, the Defendant urges, That before the Plaintiff had any thing in them, he himſelf was poſſeſs'd of 'em, as his proper Goods; and deliver'd them to *A. B.* to deliver to him again, when *&c.* and *A. B.* gave them to the

Plaintiff: and the Plaintiff, supposing the Property to be in *A. B.* at the Time of the Gift, took them; and the Defendant took 'em again from the Plaintiff; whereupon the Plaintiff brings his Action. This is a good *Colour*, and even a good Plea. See *Doct. and Stud.*

Colour *of Office*, is when some unjust Action is done, under countenance of Office, or Authority.

To Colour Strangers Goods, is when a Freeman allows a Foreigner to enter Goods at the Custom-house in his Name.

COLOURING, in Painting, the manner of applying, and conducting the *Colours* of a Picture: Or, it is the Mixture of Lights and Shadows, form'd by the various *Colours*, employ'd in a Painting. See Clair-obscure.

The *Colouring* is one of the principal Branches of Painting. M. *Felibien* divides the Painter's Art into three Parts; the Design, the Composition, and the *Colouring*. The *Colouring* strikes the most; but among Masters it always gives place to the Exactness of the Design. See Painting.

De Piles observes, that the Word *Colouring*, in its confined Sense, is chiefly applicable to a History-piece; scarce at all to a Landskip. He adds, that the Term *Colouring* relates more immediately to the Carnations than any thing else.

The *Colouring*, in its general Sense, takes in what relates to the Nature and Union of *Colours*; their Agreement, or Antipathy; how to use them to advantage in Light and Shadow, so as to shew a Relievo in the Figures, and a sinking of the Ground: What relates to the aerial Perspective, *i. e.* the Diminution of *Colours*, by means of the Interposition of Air; the various Accidents and Circumstances of the Luminary and the Medium; the different Lights, both of the Bodies illuminating and illuminated; their Reflections, Shadows, different Views, with regard either to the Position of the Eye, or the Object: What produces the Strength, Fierceness, Sweetness, &c. in Paintings well *colour'd*: The various Manners of *colouring*, both in Figures, Landskips. &c.

The Doctrine of Colouring *is comprised under the following Rules.*

Colours are consider'd, either in respect of their Use, or their Oeconomy and Disposition.

1st, With regard to their *Use*. They are either in Oil, or Water: Those in Oil, again, are either consider'd with a View to their Preparation, or Application.

In the Preparation of Oil Colours, care must be taken that they be ground fine; that in putting them on the Pallet, those which won't dry of themselves, be mix'd with Oil, or other Dryers; and that the ting'd *Colours* be mix'd in as small Quantities as possible.

For their *Application*, it is consider'd either with regard to the Kinds of Painting in Works of various *Colours*, or in those of one single *Colour*.

For the *first*: in the larger Pieces, the *Colours* are either laid on full, so as they may be *impasted*, or incorporated together, which makes them hold the more firmly.

Or else we mix those more agreeable ones, which dry too hard, and too hastily, with a little *Colour*, and the clearest of the Oil: But, in both Cases, the *Colours* are to be laid on strong at first; it being easy to weaken those that are to be thrust back, and to heighten the others: The Touches to be bold, by the Conduct of a free and steady Pencil; that the Work may appear the most finish'd at a proper distance, and the Figures animated with Life and Spirit.

For glazed Colours, care must be taken that the Under-*Colour* be painted strong, and that it be a Body-*Colour*, and laid smooth.

In finish'd Works, which are to be view'd near at hand, they proceed, either by applying each *Colour* in its place; preserving their Purity, without fretting or tormenting them, but sweetly softening off their Extremities: Or by filling up all the great Parts with one single *Colour*; and laying the other *Colours*, which are to form the little Things, upon it: which is the more expeditious way, but more apt to decay.

For the *second*: the Kinds of Pictures in one *Colour* are two, *viz. Camieux*, where the Degradations of *Colours* of Objects afar off, are usually manag'd by Lights, as with Crayons; and *Basso-Relievo*, which is an Imitation of Sculpture, of whatsoever Matter and Colour: in both these, the *Colours* are wrought dry. See Camieux, &c.

For Water-Colours, they are wrought various ways; *viz.* in *Distemper*, where the *Colours* are prepar'd in Size; which Method is used on all kinds of Matter: in *Fresco*, or Painting on fresh Mortar; where the *Colouring* must be quick, that the Matter dry not; and with much Care and Neatness, laying each Colour in its place, and intermingling them by Parcels: In *Agouache*, where the *Colours* are mix'd with Gum, and the Pencil dragg'd; as in Paint and Washings: In *Miniature*, for small and delicate Works; where the *Colours* are to be very fine and clean, mix'd with Gums and wrought in Dots or Points. See Distemper, Miniature, &c.

But in all the Kinds of Painting, both in Oil and Distemper, especially the latter, care must be taken that the Design be fix'd, and all the Parts mark'd out, ere any *Colours* be applied.

For the 2d Part of *Colouring*, or the *Oeconomy* and dispensing thereof in Paintings; regard is either had, first, to the Qualities of the *Colours*, to appropriate them according to their Value and Agreement: or, secondly, to their Effect, in the Union and Oeconomy of the Work.

For the first, it must be observ'd, that *white* represents Light, and gives the briskness and heightening; *black*, on the contrary, like Darkness, obscures and effaces the Objects: again, black sets off the light Parts; and by that they serve each other to loosen the Objects. A proper Choice to be made of *Colours*, and the too much charg'd manner to be avoided; both in *Carnations*, where red *Colours* are not to be affected, as rather resembling the Flesh when flead than the Skin; and all bright glowing *Colours*: the Skin, how delicate soever, being always of a Down-*Colour*. In the *Drapery*, where the Painter has his whole stock of *Colours* to chuse out of, to procure a good effect; and in the *Landskip*, to dispose those *Colours* near one another, which mutually assist and raise each other's Force and Briskness; as red and green, yellow and blue.

To manage 'em so, as that they be accommodated to the Effects of the great Parts of Light and Colour: that the strong *Colours* lead to the soft ones, and make 'em more look'd at; bringing 'em forwards, or keeping 'em back, according to the Situation, and the degree of Force requir'd.

For the *Effects* of *Colours*, they either regard the Union, or the Oeconomy: With respect to the first, care must be taken that they be laid so as to be sweetly united, under the briskness of some principal one; that they participate of the prevailing Light of the Piece; and that they partake of each other by the communication of Light, and the help of Reflection.

For the Oeconomy in managing their degrees, regard is to be had to the *Contrast*, or Opposition intervening in the Union of the *Colours*; that by a sweet Interruption, the briskness, which otherwise fades and palls, may be rais'd to the Harmony which makes the Variety of *Colours* agree; supplying and sustaining the Weakness of some by the Strength of others; neglecting some Places, on purpose to serve as a Basis or Repose to the Sight, and to enhance those which are to prevail thro' the Piece: To the *Degradation*; where, the better to proportion the *Colours* that fall behind, some of the same Kind are to be preserv'd in their purity, as a Standard, for those carried afar off to be compar'd by, in order to justify the Diminution: regard being always had to the quality of the Air, which, when loaded with Vapours, weakens the *Colours* more than when clear: To the *Situation* of the *Colours*; where care must be taken, that the purest and the strongest be placed before, or in the Front of the Piece; and that by their force, the compound ones, which are to appear at a distance, be kept back; particularly, the glazed *Colours* to be used in the first Rank: Lastly, to the *Expression* of the Subject, and the Nature of the Matters, or Stuffs; whether shining or dull, opake or transparent, polish'd or rough. See Carnation, Contrast, Degradation, &c.

Colouring *and Non*-colouring *Drugs*: Thus the Dyers distinguish their Drugs: the *first* are applicative, and communicate their *Colours* to the Matters boil'd in them, or pass'd thro' them; as Woods, scarlet Grain, Cochineal, Indigo, Madder, Turmeric, &c. The *second* serve to prepare and dispose the Stuffs, and other Matters; and to extract the Colour out of the *colouring* Ingredients; as Allum, Salt or Crystal of Tartar, Arsenic, Realgal, Salt-Petre, common Salt, Sal Armoniac, Sal Gemmæ, Agaric, Spirit of Wine, Bran, Pease-flour, Wheat, Starch, Lime, and Ashes.

COLUMBINE, a kind of Violet-colour, call'd also *Dove-colour*. See Colour.

S. COLUMBUS, a Congregation of Regular Canons, formerly of great Extent in *Ireland*; having under it an hundred Abbies, or Monasteries, in the *British* Islands. See Congregation, and Canon.

The principal Monastery, or Chief of the Order, according to some, was at *Armagh*; according to others, at *Londonderry*: others will have it in the Island of *Ha*, or *Hi*, or *Iona*, now called *Ycolmkil*, to the North of *Ireland*, not far from *Scotland*.

There is a Rule in *Irish* Verse, supposed to have been dictated by S. *Columbus* to his Canons.

COLUMN, in Architecture, a round Pillar, made to support or adorn a Building. See Pillar, Building, &c.

The *Column* is the principal, or reigning Part of an Order. See Order.

The principal Laws and Properties of this eminent Member of Architecture are thus deduc'd:

Every *Fulcrum*, or Support, is so much the more perfect as it is the firmer, or carries the greater appearance of firmness: and hence all *Columns*, or Pillars, ought to have their Base, or Foot, broader than themselves. See Base.

Again,

Again, as a Cylinder and a quadrangular Prism are more easily remov'd out of their place than a truncated Cone, or Pyramid, on the same Base, and of the same Altitude: The Figure of *Columns* ought not to be cylindrical; nor, that of a Pilaster, pyramidical; but both the one and the other to be contracted or diminish'd, *i. e.* to grow less and less, like a truncated Cone and a truncated Pyramid. See DIMINUTION.

For the same Reasons, the lowest Parts of the *Columns* to be cylindrical, that of Pilasters pyramidical: Hence, again, as *Columns* are more firm, if their Diameter bears a greater proportion to their Height, than if it bore a less: The greater Ratio is to be chosen, where a large weight is to be sustain'd; and less where a less.

Further, as the Design of a *Column* is to support a weight, it must never be supposed without an Entablature: tho a *Column* rais'd on an eminent Place, so as to leave no room to fear its being thrust out of its place, needs no Pedestal. See ENTABLATURE, and PEDESTAL.

The entire *Column*, in each Order, is compos'd of three principal Parts, the *Base*, the *Shaft*, and the *Capital*. See the Proportions of each under its respective Head, BASE, SHAFT, *&c.*

Each of these Parts, again, is subdivided into a great Number of lesser, called *Members*, or *Mouldings*: some whereof are essential, and found in all *Columns*; others are only accidental, and found in particular Orders. See MOULDING, ORNAMENT, *&c.*

Columns are made different, according to the several *Orders* they are used in; and likewise, not only with regard to their *Order*, but also to the *Matter*, *Construction*, *Form Disposition* and *Use*.

COLUMNS, *With regard to* Order.

Tuscan COLUMN, is the shortest, and most simple of all the *Columns*. See TUSCAN.

Its height, according to *Vitruvius*, *Palladio*, and *Vignola*, is 7 Diameters, or 14 Modules; according to *Scamozzi*, 15 Modules; to *De Lorme*, 12; to *Trajan's Column*, 16. Its Diminution, according to *Vitruvius*, is one fourth of the Diameter; according to *Vignola*, a fifth; and according to *Trajan's Column*, a ninth.

Its several Parts, Mouldings, *&c.* see under their proper Heads, SHAFT, CAPITAL, *&c.* See it represented in Plate *Architecture*, Fig. 6.

Doric COLUMN, is somewhat more delicate. See DORIC.

Its Shaft is adorn'd with Flutings: its Height, according to *Vitruvius*, is from 14 to 15 Modules; to *Scamozzi*, 17; to *Vignola*, 16; in the *Coliseum*, 19; in the *Theatre of Marcellus*, $15\frac{2}{3}$. Its Diminution, according to the Theatre of *Marcellus*, 12 Minutes; to the *Coliseum*, 4 Min. and a half. See Plate *Architecture*, Fig. 7.

Ionic COLUMN, is more delicate still. See IONIC.

It is distinguish'd from the rest by the Volutes in its Capital; and by its Base. See VOLUTE.

Its Height, according to *Palladio*, is 17 Modules $\frac{1}{3}$; according to *Vignola*, 18. Its Diminution, in the Temple of *Concord*, $10\frac{1}{2}$; of *Fortuna Virilis*, $7\frac{1}{2}$; *Coliseum*, 10 Min. See Plate *Architecture*, Fig. 8.

Corinthian COLUMN, is the richest and most delicate of all the *Columns*. See CORINTHIAN.

Its Capital is adorn'd with two rows of Leaves, and with Caulicoles; whence spring out little Volutes. Its Height, according to *Vitruvius*, and many Remains of antique Porticos, Temples, *&c.* is 19 Modules; according to *Serlio*, 18; to the *Coliseum*, 17.17; to the three *Columns* in the *Campo Vaccino*, 20; the Basilisk of *Antoninus*, 20. Its Diminution, according to the Temple of *Peace*, $6\frac{1}{2}$ Minutes; the Pantheon, $6\frac{1}{8}$; Temples of *Sibyl* and *Faustina*, 8; *Constantine*'s Arch, 7; Portico of *Septimius*, $7\frac{1}{2}$. See Plate *Architecture*, Fig. 9.

Composite COLUMN, has two rows of Leaves in its Capital, like the *Corinthian*; and angular Volutes, like the *Ionic*. See COMPOSITE.

Its Height, according to *Vignola*, and the Arch of *Titus*, is 20 Modules; to *Scamozzi*, and the Temple of *Bacchus*, $19\frac{1}{2}$; the Arch of *Septimius*, 19.09. Its Diminution, according to *Titus*'s and *Septimius* Arch, 7 Minutes; Baths of *Diocletian*, 11 Min. $\frac{1}{3}$; Temple of *Bacchus*, $6\frac{1}{2}$. See Plate *Architecture*, Fig. 10.

It may be here observ'd, that there seems more of Caprice than Reason in that Diversity found in the Heights of *Columns* of the same Order, in different Authors; each of whom frequently takes the liberty of dispensing with his own Rules.

Vitruvius, for Instance, makes the *Doric Columns* of Temples, shorter than those of Porches behind Theaters; *Palladio* gives a greater height to *Columns* standing on Pedestals, than to those which have none; and *Serlio* makes his *Column* a third shorter, when insulate, or detach'd, than when contiguous to the Wall.

But notwithstanding the diversity of Height in *Columns* of the same Order in different Authors; they still bear a true Proportion in the several Orders compar'd with each other; by which they go increasing, as the Orders are less massive.

But this Augmentation is greater in some Ordonnances than in others; for in the Antique it is but of 5 Modules, or Semidiameters, for the five Orders: the shortest *Column*, *viz.* the *Tuscan*, being 15 Modules; and the longest, the *Composite*, 20. In *Vitruvius*, this Increase is also of 5 Modules; but commences from 14 Modules, and ends at 19. The Moderns usually make it greater: *Scamozzi* makes it 5 Modules and a half; *Palladio* and *Serlio*, 6.

From the several Proportions of *Columns* assign'd by several Authors, M. *Perrault* has drawn a new one; which is a Mean, between the Extremes of the rest. Thus, he makes the *Tuscan Column* 14 Modules $\frac{2}{3}$; which is a Mean between the *Tuscan* of *Vitruvius*, 14, and that of *Trajan's Columns*, 18: The height of the *Doric Column* he makes 16 Modules; which is a Mean between the 14 of *Vitruvius*, and the 19 of the *Coliseum*: The *Ionic* he makes 17 Modules $\frac{2}{3}$; which is a Mean between the 16 of *Serlio*, and the 19 of the *Coliseum*: The *Corinthian Column* he makes 18 Modules $\frac{2}{3}$; as being a Medium between the 16 Modules 6 Minutes of the Temple of the *Sibyl*, and the 20 Modules 6 Minutes of the three *Columns* of the *Roman Forum*: Lastly, the *Composite Column*, by the same Rule, he makes 20 Modules; that height being a Mean between the Arch of *Titus*, and the Temple of *Bacchus*.

Indeed, the Rule he proceeds by seems very reasonable; *viz.* that the progressional Advance of each *Column* in the different Orders be equal: so that having settled the whole Progression, from the *Tuscan* to the *Composite*, at 5 Modules 10 Minutes; this being a Mean between the 5 Modules of the Antique, and the $5\frac{1}{2}$ of the Moderns; he divides this Sum, which is 160 Minutes, into four equal Parts, giving 40 Minutes to the Progression of each Order: This makes the *Tuscan Column* 14 Modules 20 Minutes; the *Doric* becomes 16, the *Ionic* 17, 10 Min. the *Corinthian* 18, 20 Min. and the *Composite* 20 Modules. See PROPORTION.

For the distinguishing Characters of each Order of Columns; see ORDER.

For the Matter; see STONE, MARBLE, *&c.*

For the Use and Application; see BUILDING.

For the ranging of COLUMNS, *and the Spaces to be observ'd between each*; See INTERCOLUMNATION.

COLUMNS, *with regard to their different* Matter.

Water-COLUMN, is a *Column* whose Shaft is form'd of a large *Jet d'Eau*; which spouting out Water violently from the Base, drives it within the Tambour of the Capital, which is made hollow; whence falling down again, it has the Effect of a liquid crystal *Column*. See FOUNTAIN.

An Instance of this we have at *Quinta d'Aveiro* near *Lisbon*.

Fusible COLUMN. Under this Term are comprehended, not only *Columns* of various Metals, and other fusible Matters, as Glass, *&c.* but also those of Stone, said to have been cast; the Secret of which, some will have us believe to have been known to the Antients.

Transparent COLUMN, any *Column* made of transparent Matter; as were those of Crystal in the Theater of *Scaurus*, mention'd by *Pliny*; and those of transparent Alabaster, in the Church of St. *Mark*, at *Venice*.

Hydraulic COLUMN, is that whose Shaft appears to be of Crystal, being form'd by a number of little Threads of Water, falling from Holes made in Girts of Metal, at equal distances, by means of a Pipe mounting thro' the middle thereof; as in the Gardens at *Versailles*.

Hydraulic COLUMN, is also a *Column* from whose top proceeds a *Jet d'Eau*, to which the Capital serves as a Bason; whence the Water descends by a little Pipe, which turns spirally around the Shaft.

Such are the *Ionic Columns* of the Cascade of the *Belvidera* at *Frescati*; and those of the Vineyard *Mathei* at *Rome*.

Molded COLUMN, is that made by Impastation, of Gravel and Flints of divers Colours, bound together with a Cement, which grows perfectly hard, and receives a polish like Marble.

The Secret of making these, it appears the Antients were Masters of, by the *Columns* lately discover'd near *Algiers*; which are doubtless the Ruins of the antient *Julia Cæsarea*: on these are found the very same Inscription in antique Characters, the Contours, Accents, and even Faults, being repeated in every Shaft: an incontestable Proof of their being molded.

COLUMNS *with regard to their* Construction.

COLUMN *of Joinery*, is made of strong timber boards, join'd, glu'd, and pinn'd together; is hollow, turn'd in the Lath, and usually fluted. Such are the *Columns* in most Altar-pieces.

Incrustated COLUMN, is made of several Ribs, or thin Shells of fine Marble, or other rare Stone, cemented upon a Mold of Stone, Brick, or the like. This is done with design both to save the precious Matter, as Oriental Jasper, Lapis, Agat, *&c.* or to represent pieces of such Matters of an extraordinary size, by the neatness and closeness of the Incrustation, which renders the Joints imperceptible.

Gemi-

Geminated COLUMN, that whose Shaft is form'd of three similar and equal Sides, or Ribs of Stone, fitted within one another; and fasten'd at bottom with Iron Pins, and a-top with Cramp-Irons. This is to be fluted, that the Joints may be the less discernible.

COLUMN *of Masonry*, is made of rough Stone, well laid and cover'd with Plaister; or of Bricks molded triangular-wise, and cover'd with Stuc.

COLUMN *with Bands, or Tambours*; that whose Shaft is form'd of several Courses of Stone, or Blocks of Marble; less high than the Diameter of the *Column*: This is what *Ulpian* means by *Columna structilis*, or *adpacta*; which is opposite to the *Columna solida*, or *integra*, *i.e.* of one piece.

COLUMN *in Truncheons*, or *Pieces* consists of three, four, or five pieces of Stone, or Metal; differing from the Tambours, as being higher than the Diameter of the *Column*.

COLUMNS, *with regard to their* Form.

Fluted COLUMN, called also *channell'd*, and *striated Column*; that whose Shaft is adorn'd with Flutes, or Channelings; either from top to bottom, or only two thirds of its height. See FLUTING.

Cabled, or *Rudented* COLUMN, is a *Column* having Projectures in form of Cables, or Canes, in the Naked of the Shaft; each Cable having an Effect opposite to that of a Fluting; and accompany'd with a little List on each side. See CABLING.

Fluted and Cabled COLUMN, is that whose Flutes are fill'd up with Cables, Reeds, or Staves; beginning from the bottom of the Shaft, and reaching one third of its height.

Fluted COLUMN *enrich'd*, is that whose Flutings are fill'd up with Ornaments of Foliages, Rinds, Ribbons, *&c.* instead of Cables.

Twisted COLUMN, is that whose Shaft is twisted round, in manner of a Screw, with six Circumvolutions; being, ordinarily of the *Corinthian* Order: *Vignola* first found a Method of drawing it by Rule.

A twisted fluted COLUMN, is that whose Flutes follow the Contour of the Shaft, in a spiral Line throughout the whole length; whereof there are some antique ones of Porphyry, and hard Marble.

COLUMN *twisted and enrich'd*, is that, one third of whose Shaft is fluted, and the rest adorn'd with Branches and other Enrichments: and which being all of Marble, is enrich'd with Sculpture from bottom to top.

Sometimes, again, the *twisted Column* is form'd of two or three slender Shafts, twisted round, so as to leave a Cavity in the middle. Sometimes the Flutings are Spiral, yet the Shaft strait; which succeeds very well in the more delicate Orders.

Colossal COLUMN, a *Column* of enormous size, too large to enter any Ordonnance of Architecture; to be placed solitary, in the middle of a Square, *&c.* See COLOSSUS.

Such is the *Trajan Column*, whose Proportions are *Doric*, and its Profile *Tuscan*; 12 Feet and $\frac{1}{2}$ in Diameter, and 100 in Height, including the Base and the Capital: The Pedestal has 18 Feet, and the Crowning 16 and an half. It supports a brazen Statue of St. *Peter*, 13 Foot high: The whole making 147 antient *Roman* Feet.

It was built by *Apollodorus*; and consists of 34 Tambours, or Blocks, or Pieces of white Marble, taking in the Crowning.

The *Antonine Column*, which is also of white Marble, is inferior to the *Trajan* in beauty of Sculpture, but exceeds it in height; being 168 Feet to the Capital, besides the Feet of the Pedestal under ground.

Lastly, the *London Column*, or Monument, is of Stone, 15 Foot in Diameter, and 202 high; taking in the Pedestal and Crowning. See MONUMENT.

Carolitic COLUMN, that adorn'd with Foliages, or Leaves and Branches turn'd spirally around the Shaft; or in Crowns and Festoons.

These were used by the Antients for raising Statues on; which hence took the Denomination of *Carolitic*.

They are very suitable in triumphal Arches, and Decorations of Theaters.

Swell'd COLUMNS, are those which have a buldging, or swelling, in proportion to the height of the Shaft.

Authors are much divided on the Subject of this *Swelling*; Sir *H. Wotton* treats it as a most ridiculous Abuse: yet the Practice obtains among the modern Architects; who generally make their *Columns* a little bigger at one third of their height, than at the Base; *i. e.* they diminish the *Column* near the Base; which makes the Part appear big, and occasions a Swelling at about one third of the height.

This Swelling appears to have been unknown to the Antients. M. *le Clerc* observes, it ought not to exceed one Minute and a half at most. He thinks it ought never to be us'd, excepting where there is a particular occasion for it; as where *Columns* are to be placed over one another.

Diminish'd COLUMN, is that which has no swelling, but begins to taper, or diminish, from the Base; in imitation of Trees. See DIMINUTION.

Such are most of the Antique *Columns* of *Granate*; particularly the *Corinthian* ones in the Porch of the Pantheon.

Gothic COLUMN, a round Pillar, either too short for its bulk, or too slender for its height; as having, sometimes, 20 Diameters; and this without either Diminution, or Swelling: yet, its Ornaments, and the Characters of its work, being as far from those of the Antique as its Proportions. See GOTHIC.

Hermetic COLUMN, a kind of Pilaster, in manner of a Terminus; having the Head of a Man, in lieu of a Capital. It had its Name from a Custom among the Antients, of placing *Mercury*'s Head, whom the *Greeks* call *Hermes*, a-top of *Columns*. See HERMES.

Massive COLUMNS, are those too short for the Order whose Capital they bear; as the Pillars in *Gothic* Churches usually are. See MASSIVE.

Under the Term *Massive*, are, likewise, frequently comprehended *Rustic* and *Tuscan Columns*. See RUSTIC.

Cylindrical COLUMN, is that which has neither Swelling nor Diminution.

Oval COLUMN, that whose Shaft has a Flatness; its Plan being made oval, to reduce the Projecture.

Polygonous COLUMN, has several Sides, or Faces: The most Regular of these have eight Faces.

These three last, *Daviler* regards as Abuses in Architecture.

Pastoral COLUMN, that whose Shaft is form'd in imitation of the Trunk of a Tree, with Bark and Knots.

This Kind of *Column*, in the *Tuscan* Proportion, may be used in the Gates of Parks and Gardens; in the Decoration of Pastoral Scenes, *&c.*

Serpentine COLUMN, a *Column* form'd of three Serpents, twisted together; the Heads whereof serve as a Capital.

An Instance of this is at *Constantinople*, in the Square called *Atmeidan*, antiently the *Hippodrome*. *P. Gilles* calls this the *Delphic Column*; as imagining it antiently serv'd for the Tripod of *Apollo*, in the Temple at *Delphos*. It is now ordinarily called the *Talisman*, or *Enchanted Column*.

COLUMNS, *with regard to their* Disposition.

Insulated COLUMN, is that standing free, and detach'd, on all Sides, from any other Body.

COLUMN *inserted*, or *back'd*, is that attach'd to a Wall, by a third or fourth Part of its Diameter.

COLUMN *Nich'd*, is that whose Shaft enters, with half its Diameter, into a Wall, which is hollowed for its Recepion; with its Plan parallel to the Projecture of the Tore.

Such is that in the Portal of St. *Peter* at *Rome*.

Angular COLUMN, is an insulated *Column*, placed in the Coin, or Corner of a Portico; or inserted into the Corner of a Building: Or, even a *Column* that flanks an Angle, either acute or obtuse, of a Figure of many Sides.

Attic COLUMN, according to *Pliny*, is a Pilaster insulated; having four equal Faces, or Sides; and of the highest Proportion, *v. g. Corinthian*.

Flank'd COLUMN, according to M. *Blondel*, is a *Column* engag'd with one half, or at least, one third of its Diameter, between two Demi-Pilasters.

Doubled COLUMN, is an Assemblage of two *Columns*; join'd in such a manner, as that the two Shafts penetrate each other with a third of their Diameter. Such are those of the four Angles in the Court of the *Louvre*.

Coupled COLUMNS, are those disposed by two and two; so as almost to touch each other at their Bases, and Capitals.

Canton'd COLUMNS, those engag'd in the four Corners of a square Pillar, to support four Springs of an Arch.

Grouped COLUMNS, those placed on the same Pedestal, or Socle; either by three and three, or by four and four.

Median COLUMNS. *Vitruvius* gives the Name *Columnæ Medianæ*, to the two *Columns* in the middle of a Porch, which have their Intercolumniation larger than the rest: So that if these last, for instance, be *Pycnostyles*; the *Medianes* are *Eustyle*.

The Term may also be applied to the middle Row of *Columns*, in a Frontispiece adorn'd with three Orders.

COLUMNS, *with regard to their* Use.

Astronomical COLUMN, is a kind of Observatory, in form of a very high Tower; built hollow, and with a spiral Ascent to an Armillary Sphere; placed a-top, for observing the Courses of the heavenly Bodies.

Such is that, of the *Doric* Order, erected at the *Hotel de Soissons* at *Paris*, by *Catherine de Medicis*, for the Observations of *Orontius Fineus*, a celebrated Astronomer of that Time.

Chronological COLUMN, that which bears some historical Inscription, digested according to the Order of Time: as by Lustra, Olympiads, Fasti, Epochas, Annals, *&c.*

At *Athens* there were *Columns* of this kind, whereon were inscrib'd the whole History of *Greece*, digested into Olympiads.

Hollow COLUMN, that which has a spiral Stair-case within-side, for the Convenience of ascending to the top: As the *Trajan Column*, the Stair-case whereof consists of 185 Steps, and is illumin'd by 43 little Windows: The *Antonine Column*,

lumn has 198 Steps, with 56 Windows; each of these is cut in Tambours of white Marble. The *Monument*, or *Fire-Column* at *London*, has also a Stair-case; but it does not reach to the top.

These kind of *Columns* are called also *Columnæ Cochlides*, or *Cochlidea*, *q. d.* a Stair-case in form of a Snail.

Funeral COLUMN, that which bears an Urn, wherein are supposed to be inclos'd the Ashes of some deceas'd Hero; and whose Shaft is sometimes overspread with Tears, or Flames; which are Symbols of Sorrow, and of Immortality.

Gnomonic COLUMN, a Cylinder, whereon the Hour of the Day is represented by the Shadow of a Style.

Of these there are two Kinds: in the one, the Style is fix'd, and the Hour-Lines are no more than the Projection of a vertical Dial, on a cylindrical Surface.

In the other, the Style is movable; and the Hour-Lines are drawn to the different Heights of the Sun, in the different Seasons of the Year.

Historical COLUMN, is that whose Shaft is adorn'd with a Basso-Relievo, running in a spiral Line its whole length; and containing the History of some great Personage.

Such are the *Trajan* and *Antonine Columns*, at *Rome*.

Historical Columns may likewise be divided by Bands, or Tambours, into separate Basso-Relievos, containing distinct Subjects; by which means, the same *Columns* may likewise be made to answer the End of Chronological ones.

This Manner *Vignola* prefers to the former; which, he thinks, appears too much confused.

Indicative COLUMN, that which serves to shew the Tides, *&c.* along the Sea-Coasts. Of this kind, there is one at *Grand Cairo*, of Marble, whereon the Overflowings of the *Nile* are express'd: By this they form a Judgment of the succeeding Season: when the Water, for instance, ascends to 23 Foot, 'tis a Sign of great Fertility in *Egypt*. See NILOMETER.

Instructive COLUMN, that rais'd, according to *Josephus*, Lib. I. cap. 3. by the Sons of *Adam*, whereon were engraven the Principles of Arts and Sciences.

Baudelot tells us, that the Son of *Pisistratus* rais'd another of this kind, of Stone; containing the Rules and Precepts of Agriculture.

Itinerary COLUMN, a *Column* with several Faces, placed in the Cross-ways in large Roads; serving to shew the different Routs, by the Inscriptions thereupon.

Lactary COLUMN, at *Rome*, according to *Festus*, was a *Column* erected in the Herb-Market, now the *Platea Montanara*; which had a Cavity in its Pedestal, wherein young Children, abandon'd by their Parents, out of Poverty or Inhumanity, were exposed, to be brought up at the publick Expence.

Legal COLUMN. Among the *Lacedemonians*, there were *Columns* rais'd in publick Places, whereon were engraven the fundamental Laws of the State.

Limitrophous, or *Boundary* COLUMN, that which shews the Limits of a Kingdom, or Country conquer'd. Such was that, which, *Pliny* says, *Alexander* the Great erected at the Extremities of the *Indies*.

As to those of *Hercules*, ordinarily call'd his *Columns*, or *Pillars*; they are only two very steep Mountains in the Straights of *Gades*, now *Gibraltar*.

Luminous COLUMN, a sort of *Column* form'd on a cylindrical Frame, mounted and cover'd over with oil'd Paper, or Gawze; so that Lights being dispos'd in ranks over each other, the whole appears as on fire.

This sort of *Column* is likewise made with rows of Lamps, or Torches, running round its Shaft; either in horizontal Belts, or Bands; or in a spiral Line, continued over a Festoon of Flowers.

Manubiary COLUMN, from the Latin *Manubiæ*, Spoils of the Enemy; a *Column* adorn'd with Trophies, built in imitation of Trees, whereon the Spoils of Enemies were antiently hung. See TROPHY.

Memorial COLUMN, that rais'd on occasion of any remarkable Event; as the *Monument* in *London*, built to perpetuate the Memory of the Burning of that City, in 1666.

It is of the *Doric* Order, fluted, hollow, with a winding Stair-case; and terminated a-top with waving Flames.

There is, also, another of the like Kind, in form of an Obelisk, on the Banks of the *Rhine* in the *Palatinate*, in memory of the famous Passage of that River, by the great *Gustavus Adolphus* and his Army.

Menian COLUMN, any *Column* which supports a Balcony, or Meniane. See MENIANE.

The Origin of this kind of *Column*, *Suetonius* and *Ascanius* refer to one *Menias*; who having sold his House to *Cato* and *Flaccus*, Consuls, to be converted into a publick Edifice; reserv'd to himself the Right of rasing a *Column* without side, to bear a Balcony; whence he might see the Shews.

Military COLUMN, among the *Romans*, a *Column* whereon was engraven a List of the Forces in the *Roman* Army, ranged by Legions, in their proper order; with design to preserve the Memory of the Number of Soldiers, and of the Order observ'd in any Military Expedition.

The *Romans* had another kind of *Military Column*, which they called *Columna Bellica*, standing before the Temple of *Janus*; at the Foot whereof the Consul declar'd War, by throwing a Javelin towards the Enemies Countries.

Miliary COLUMN, was a *Column* of Marble, rais'd by order of *Augustus*, in the middle of the *Roman Forum*; from whence, as a Centre, the Distances of the several Cities, *&c.* of the Empire were reckon'd, by other *Miliary Columns*; dispos'd at equal distances, on all the grand Roads. See MILIARY.

This *Column* was of white Marble; the same with that which is now seen on the Balustrade of the Perron of the Capital at *Rome*.

Its proportion is massive; being a short Cylinder, with a *Tuscan* Base and Capital, and a Brass Ball for a Crowning, the Symbol of the Globe of the Earth.

It was called *Miliarium Aureum*; as having been gilt, at least the Ball, by order of *Augustus*. It was restor'd by the Emperors *Vespasian* and *Adrian*; as appears by the Inscriptions.

Phosphorical COLUMN, a *Lighthouse*; or a hollow *Column*, built on a Rock, or the Tip of a Mole, or other Eminence, to serve as a Lanthorn to a Port.

Rostral COLUMN, that adorn'd with the Beaks, or Prows of Ships and Galleys, with Anchors and Grapplers; erected, either in memory of a Naval Victory; as the *Tuscan Column*, in the Capitol: or, in honour of some Admiral; as the *Doric* ones, at the Entrance of the Castle *de Richlieu*.

Sepulchral COLUMN, antiently, was a *Column* erected on a Tomb or Sepulchre; with an Inscription on its Base. See TOMB, *&c.*

Those over the Tombs of Persons of Distinction were very large; those for the common People small: these last are called *Stelæ* and *Cippi*. See CIPPUS, *&c.*

Statuary COLUMN, that which supports a Statue. Such was that erected by Pope *Paul* V. on a Pedestal before the Church of St. *Maria major* at *Rome*; to support a Statue of the Virgin, which is of gilt Brass. See STATUE.

This *Column* was dug up in the Temple of *Peace*; its Shaft is a single Block of white Marble 49 Foot and an half high, and 5 Foot 8 Inches Diameter; of the *Corinthian* Order, fluted.

The Term *Statuary Column*, may likewise be apply'd to Caryatides, Persians, Termini, and other human Figures, which do the Office of *Columns*; and which *Vitruvius* calls *Telamones*, and *Atlantes*. See CARYATIDES, *&c.*

Symbolical COLUMN, is a *Column* representing some particular Country, by the Attributes proper thereto: As that of the *French* Order, set with Flower de Lis's, in the Frontispiece of the Jesuits Church at *Rouen*: or some memorable Action; as the *Corvinian Column*, on which was a Crow; erected to *Valerius Maximus*, Sirnam'd *Corvinus*, in memory of his Defeat of a Giant in the Army of the *Gauls*, by the Assistance of a Crow.

Under the Title of *Symbolic Columns*, may also be comprehended those which serve for Symbols. Such is that in a Medal of *Nero*, which expresses the Stability of the *Roman* Empire. See SYMBOL.

Triumphal COLUMN, a *Column* erected among the Antients in honour of an Hero; the Joints of the Stones, or Courses whereof, were cover'd with as many Crowns, as he had made different Military Expeditions. See TRIUMPH.

Each Crown had its particular Name; as *Palissaris*, which was set with Spikes, in memory of having forced a Palisade. *Muralis*, adorned with little Turrets, or Battlements; for having mounted to an Assault. *Navalis*, of Prows and Beaks of Vessels; for having overcome at Sea. *Obsidionalis*, or *Graminalis*, of Grass; for having rais'd a Siege. *Ovans*, of Myrtle; which express'd an Ovation, or little Triumph: And *Triumphalis*, of Laurel; for a grand Triumph. See CROWN.

Procopius tells us of a *Column* of this Kind, erected in the place called *Augusteum*, before the Imperial Palace of *Constantinople*, supporting an *Equestrian* Statue of the Emperor *Justinian*.

Zophoric COLUMN, a kind of Statuary *Column*, whereon is placed a Figure of some Animal. Such is one of the two *Columns* of the Gate of *Venice*; whereon is the Lion of St. *Mark*, and the Arms of the Republick: or that at *Sienna*, which bears the Wolf that suckled *Romulus* and *Remus*.

COLUMN, in War, a deep File, or Row of Troops; or a Division of an Army, which marches at the same Time, and towards the same Place, at Intervals large enough to avoid Confusion.

An Army marches in one, two, three, or more *Columns*; according as the Ground will allow, and the General sees expedient.

The Word is also used in speaking of Vessels at Sea, following each other in the same Line.

'Tis difficult to form *Columns* at Sea, unless the Wind be in Stern.

COLUMN, among Printers, is half a Page, when the Page is divided into two Parts, from top to bottom See PAGE.

COLUMNA *Nasi*, is used by some Writers of Anatomy, for the fleshy Part of the Nose jutting out over the upper Lip. See NOSE.

COLUMNA *Oris*, is sometimes used for the *Uvula*. See UVULA.

COLUMNÆ *Carneæ*, in Anatomy, called also *Lacertuli*, and *Columnæ Cordis*; are several small Muscles in the Ventricles of the Heart; derived, and, as it were, detach'd from the Parietes of the Ventricles, and connected by tendinous Extremities to the Valves of the Heart. See HEART.

These little *Columns*, or Pillars, being fasten'd to the Parietes of the Heart on one side, and the Tricuspid and Mitral Valves on the other; do, by their Contraction in the Systole of the Heart, draw out the Valves; and by that means, not only shut the Orifices of the Veins, but more exactly close the Ventricles in their Systole. See SYSTOLE, and DIASTOLE.

COLURES, in Geography and Astronomy, two great Circles, imagined to intersect each other at right Angles, in the Poles of the World. See CIRCLE.

The *Colures* pass, one of 'em thro' the *Solstitial*, and the other thro' the *Equinoctial* Points of the Ecliptic: whence the first is denominated the *Solstitial* and the second the *Equinoctial Colure*. See SOLSTITIAL, and EQUINOCTIAL.

The Equinoctial *Colure* determines the Equinoxes; and the Solstitial, the Solstices. See EQUINOX, and SOLSTICE.

By thus dividing the Ecliptic into four equal Parts, they mark the four Seasons of the Year. See SEASON.

The Word is deriv'd from the *Greek* κόλος, *mutilus*, or *truncatus*, and οὐρὰ *tail*; as appearing with the *Tail cut off*; because never seen entire above the Horizon.

COLYBA, a Term in the *Greek* Liturgy, signifying an Offering of Grains, and boil'd Pulse; made in honour of the Saints, and for the sake of the Dead.

Balsamon, *P. Goar*, *Leo Allatius*, and others, have wrote on the Subject of *Colybas*: the Substance of what they have said, is as follows.

The *Greeks* boil a quantity of Wheat, and lay it in little Heaps on a Plate; adding beaten Peas, Nuts cut small, and Grape-stones, which they divide into several Compartments, separated from each other by Leaves of Parsley. A little Heap of Wheat thus season'd, they call κολύβα.

They have a particular *Formula* for the Benediction of the *Colybas*; wherein, praying that the Children of *Babylon* may be fed with Pulse, and that they may be in better Plight than other People, they desire God to bless those Fruits, and those who eat them, because offer'd to his Glory, to the honour of such a Saint, and in memory of the faithful Deceased.

Balsamon refers the Institution of that Ceremony to S. *Athanasius*; but the *Greek Synaxary* to the Time of *Julian* the Apostate.

Many of the *Latin* Divines having spoke injuriously of this Ceremony, *Gabriel* Archbishop of *Philadelphia*, has wrote a Discourse in its Vindication; wherein he endeavours to shew, that the Design of the *Colyba* is only to represent the Resurrection of the Dead, and to confirm the Faithful in the Belief thereof.

The *Colybæ*, he says, are Symbols of a general Resurrection; and the several Ingredients added to the Wheat, signify so many different Virtues.

COMA, in Medicine, a sort of a sleepy Disease, otherwise called *Cataphora*; consisting in a violent propensity to sleep, whether Sleep ensue, or not. See SLEEP.

If Sleep do ensue, the Disease is called *Coma Somnolentum*, wherein the Patient continues in a profound Sleep; and when awak'd, immediately relapses, without being able to keep open his Eyes.

If he do not sleep, but is continually awak'd with frightful Dreams, 'tis called *Coma Vigil*: and here too his Eyes are shut, and he appears asleep.

The Cause of the *Coma Somnolentum*, may be any thing that prevents the Course of the Spirits; as a cold, humid temperature of the Brain; hot putrid Vapours ascending into the Head, and stopping the Canals of the Animal Spirits; narcotick Vapours, &c.

The *Coma Vigil* is supposed to arise from the Conflict, or jarring Mixture of Bile with *Pituita*; the one urging to sleep, the other to waking. Hence, the Patient sleeps either not at all; or, at most, but for a moment; is uneasy, starts, rises up, and sometimes throws himself on the Persons near him; his Eyes, all the time fast closed.

The Remedies for a *Coma*, are those which occasion great Evacuations; as violent Clysters, or Vomitives; Medicines that purge, and dry the Brain; and those which occasion Revulsion of Humours; as Vesicatories, Cauteries, &c. to which may be added volatile Spirits, Salts, and most Cephalicks.

COMA, in Grammar. See COMMA.

COMA BERENICES, *Berenice's Hair*, in Astronomy, a Constellation of the Northern Hemisphere. See CONSTELLATION.

The Stars in the Constellation *Coma Berenices*, in *Ptolomy*'s Catalogue are 3; in *Tycho*'s 13; in the *Britannic Catalogue* 40. The Order, Names, Longitudes, Latitudes, Magnitudes, &c. whereof, are as follow.

Stars in the Constellation COMA BERENICES.

	Signs.	Longitude.			Latitude.			Magn.
Names and Situations of the Stars.		°	′	″	°	′	″	
	♍	16	53	24	20	21	46	7
		17	44	9	20	2	11	6
		21	14	30	16	27	0	6
		17	21	15	24	45	23	6
		19	56	6	19	59	7	6
5								
First of all in the Circle of the Hair, to the South		23	16	44	15	13	55	5
		19	18	19	23	28	33	4 5
		20	24	1	22	56	57	7
		17	56	28	27	34	35	6
		17	50	59	27	51	56	6
10								
		23	5	51	18	19	53	4 5
3d of the prec. from the Cusp, or Point		19	45	29	25	57	32	5
2d of the preced.		20	2	23	26	11	47	5
That preced. in the Cusp		19	55	40	27	26	54	5
In the Cusp towards the North		19	32	24	28	24	2	4 5
15								
That under this		20	16	55	27	6	50	5
That following this		21	10	29	26	29	11	6
First of 3 contiguous ones behind this		22	10	36	24	55	18	6
		23	43	26	22	2	38	6
Middle of the contiguous ones		22	18	15	25	29	10	4 5
20								
Subseq. and less		23	1	59	25	29	11	7
Anoth. following all these, and more S.		24	7	1	24	7	9	4
That preced. several under the Hair		26	7	23	20	17	57	5
		27	6	49	19	19	12	6
		25	48	38	23	8	10	5
25								
		29	34	59	19	48	42	5
	♎	1	16	5	17	12	57	6
		1	10	30	17	48	0	5
	♍	24	57	52	29	58	24	6
Preced. in the Hair		25	30	24	30	12	24	5
30								
	♎	0	39	2	20	48	10	7
More South in the Hair	♍	28	59	44	24	42	42	4 5
	♎	2	3	55	21	46	56	5
	♍	25	43	4	33	56	36	5 6
	♎	2	42	23	21	45	14	6
35								
		2	5	7	25	55	56	5
		1	22	51	27	14	39	6
Former of 2 in Extrem. of the Hair	♎	29	1	29	31	49	22	5
	♍	4	38	35	22	59	12	4 5
Posterior in the Extremity of the Hair		0	6	31	32	28	33	4
40								

All these Stars *Ptolomy* ranks among the *Informes* of *Leo*; and the Cluster of little Stars, in form of a Nebulous one, between the Lion and Bear, he calls simply πλόκαμον; as resembling an Ivy-leaf: the pointed Part whereof is turn'd towards the North, and the Sides, bounded by the 7th and 22d Stars. *Bayer*, instead of Hair, gives a Sheaf of Corn.

COMBAT, an *Engagement*; or a Difference decided by way of Arms.

Authors distinguish in an Army, between a *Combat* and a Battel; the latter expressing the general Action of the whole Army: the former a particular Skirmish, or Engagement of a single part: so that the *Combat* is properly a Part of a Battel. See BATTEL.

COMBAT, in Law; or, *Single*-COMBAT; a formal Trial, between two Champions, of some doubtful Cause or Quarrel, by the Sword, or Batoons. See TRIAL.

This form of Proceeding was antiently very popular; and obtain'd not only in Criminal, but also in Civil Causes: being built on a Presumption, that God would never grant the Victory, but to him who had the best right. See DUEL.

We find the *Combat* as early as the Time of *Otho*: The last admitted in *England*, was *6 Car.* I. between *Donald* Lord *Rhee*, or *Rey*, and *David Ramsey* Esq; in the *Painted Chamber*.

The Form and Ceremony of the *Combat*, is describ'd in the *Grand Coutumier of Normandy*: The Accuser, first, swore to the Truth of his Accusation; the Accused gave him the Lye: upon which, each threw down a Gage, or Pledge of Battel; and the Parties were committed Prisoners till the Day of *combat*. See CHAMPION.

Historians tell us, that *Alphonso* King of *Castile*, desiring to abolish the *Mosarabic* Rite, and to introduce the *Roman* Office: the People opposing it, 'twas agreed to terminate the Difference by *Combat*; and to leave the Cause to the Decision of Heaven.

COMBAT is also used for the solemn Games of the antient *Greeks* and *Romans*, in honour of their Gods; as the *Olympic* Games, *Pythian*, *Isthmæan*, and *Nemæan* Games; the *Ludi Actiaci*, *Circenses*, &c. which see in their Places, OLYMPIC, ISTHMÆAN, &c.

The

The *Combats* here celebrated, were *Running*, *Wrestling*, *Boxing*, *Cestus*, &c.

The Combatants, who were called *Athletæ*, prepar'd themselves for it from their youth, by constant Exercise, and a very rigid Regimen: they only eat certain Things, and at certain Hours; drank no Wine, had no commerce with Women: both their Labour and their Rest were regulated. See ATHLETÆ, GLADIATOR, *&c.*

COMBATANT, is the Heralds Word for two Lions, *&c.* born in a Coat of Arms in a fighting posture, rampant; and their Faces towords each other.

COMBINATION, is properly understood of an Assemblage of several Things by two, and two.

COMBINATION is also used for the Variation, or Alternation of any Number of Quantities, Letters, Sounds, or the like, in all the different Manners possible. See CHANGES.

P. Mersenne gives us the *Combinations* of all the Notes and Sounds in Musick, as far as 24; the Sum whereof amounts to 90 Figures, or Places.

The Number of *Combinations* of the 24 Letters of the Alphabet, taken first two by two, then three by three, *&c.* M. *Prestet* has calculated to be 139172428888725299942 5128493402200. See LETTER, and ALPHABET.

The Words in the following Verse may be *combin'd* a thousand twenty two several ways.

Tot tibi sunt Dotes, Virgo, quot sidera Cœlo.

Doctrine of COMBINATIONS.

Any Number of Quantities being given, together with the Number in each Combination; *to find the Number of* Combinations.

One Quantity, we observe, admits of no *Combination*; two, *a* and *b*, of one; of three *a b c*, there are three *Combinations*, viz. *a b*, *a c*, *b c*; of four, six, *a b*, *a c*, *b c*, *a d*, *b d*, *c d*; of five, ten, *a b*, *a c*, *b c*, *a d*, *b d*, *c d*, *a e*, *b e*, *c e*, *d e*.

Whence it appears, that the Numbers of *Combinations* proceed as 1, 3, 6, 10, *&c. i. e.* are triangular Numbers, whose Side differs by Unity from the Number of given Quantities: if that, *v. g.* be *q*, the Side of the Number of *Combinations* will be $q - 1$; and therefore the Number of *Combinations* $\frac{q-1}{1} \cdot \frac{q+0}{2}$. See TRIANGULAR *Number*.

If three Quantities are to be *combin'd*, and the Number in each *Combination* be three, there will only be one *Combination*, *a b c*; if a fourth be added, the *Combinations* will be found *a b c*, *a b d*, *b c d*, *a c d*; if a fifth, ten, *a b c*, *a b d*, *b c d*, *a c d*, *a b e*, *b d e*, *b c e*, *a c e*, *a d e*; if a sixth, twenty, *&c.* The Numbers of *Combinations*, therefore, proceed as 1, 4, 10, 20, *i. e.* are the first pyramidal triangular Numbers, whose Sides differ by two Unites from the Number of given Quantities. See PYRAMIDAL *Number*.

Hence, if the Number of given Quantities be *q*, the Side will be $q - 2$; and therefore, the Number of *Combinations* $\frac{q-2}{1} \cdot \frac{q-1}{2} \cdot \frac{q+0}{3}$.

Hence is easily deduced a general Rule of determining the Number of *Combinations* in any Case: For, suppose the Number of Quantities to be combined, *q*, the Exponent of the *Combination* will be the Number of *Combinations* $\frac{q-n+1}{1} \cdot \frac{q-n+2}{2} \cdot \frac{q-n+3}{3} \cdot \frac{q-n+4}{4} \cdot \frac{q-n+5}{5}$, *&c.* till the Number to be added be equal to *n*.

Suppose, *v. g.* the Number of Quantities to be *combined* $= 6$; the Exponent of the *Combination* 4; the Number of *Combinations* will be $\frac{6-4+1}{1} \cdot \frac{6-4+2}{2} \cdot \frac{6-4+3}{3} \cdot \frac{6-4+4}{4} = \frac{6-3}{1} \cdot \frac{6-2}{2} \cdot \frac{6-1}{3} \cdot \frac{6+0}{4} = \frac{3}{1} \cdot \frac{4}{2} \cdot \frac{5}{3} \cdot \frac{6}{4} = 15$.

Coroll. If it be desir'd to have all the possible *Combinations* of the given Quantities beginning with the *Combinations* of the several Twos, proceeding to threes, *&c.* there must be added $\frac{q-1}{1} \cdot \frac{q+0}{2} \cdot \frac{q-2}{1} \cdot \frac{q-1}{2} \cdot \frac{q+0}{3} \cdot \frac{q-3}{1} \cdot \frac{q-2}{2} \cdot \frac{q-1}{3} \cdot \frac{q+0}{4}$, *&c.* Whence the Number of *Combinations* possible will be $\frac{q.q-1.}{1.2} + \frac{q.q-1.q-2}{1.2.3.} + \frac{q.q-1.q-2.q-3}{1.2.3.4.} + \frac{q.q-1.q-2.q-3.q-4.}{1.2.3.4.5}$, *&c.* which is the Sum of the *Unciæ* of the Binomial, rais'd to the Power *q*, and abridg'd of the Exponent of the Power increas'd by Unity, $q + 1$. Wherefore, since those *Unciæ* come out $1 + 1$, by being rais'd to the Power *q*; and since $1 + 1 = 2$; $2^q - q - 1$ is the Number of all the possible *Combinations*, *v. g.* If the Number of Quantities be 5, the Number of possible *Combinations* will be $2 - 6 = 32 - 6 = 26$.

Any Number of Quantities being given, to find the Number of Changes and Alternations, which those Quantites, combin'd *in all the Manners possible, can undergo.*

Suppose two Quantities, *a* and *b*; their Variations will be 2; consequently, as each of those may be *combined*, even with it self, to these there must be added two Variations. The whole Number, therefore, will be $2 + 2 = 4$. If there were three Quantities, and the Exponent of the Variation 2; the *Combinations* will be 3, and the Changes 9: to which, if the three *Combinations* of each Quantity with it self *a a*, *b b*, *c c*, be added, we shall have the Number of Changes, $3 + 3 + 3 = 9$.

In like manner, 'tis evident, if the given Quantities were 4, and the Exponent 2, the Number of Changes would be 16; if 5, 25, *&c.* and, in general, if *n*, n^2.

Suppose the Quantities 3, and the Exponent of Variation 3; the Number of Changes is found $27 = 3^3$; *viz. a a a*, *a a b*, *a b a*, *b a a*, *a b b*, *a a c*, *a c a*, *c a a*, *a b c*, *b a c*, *b c a*, *a c b*, *c a b*, *c b a*, *a c c*, *c a c*, *c c a*, *b b a*, *b a b*, *b b b*, *b b c*, *c b b*, *b c b*, *b c c*, *c b c*, *c c c*.

After the same manner, it will appear, if the Quantities were 4, and the Exponent 3, the Number of Changes would be $64 = 4^3$: and, in general, if the Number of Quantities be $= n$, and the Exponent 3, tho Number of Changes will be n^3. By thus proceeding, it will be found, that if the Number of Quantities be *n*, and the Exponent *n*, the Number of Changes will be n^n: wherefore, if all the Antecedents be added, where the Exponent is less, the Number of possible Changes will be found $n^n + n^{n-1} + n^{n-2} + n^{n-3} + n^{n-4} + n^{n-5} + n^{n-6}$, *&c.* Till at length, the Number subtracted from *n*, leaves 1; because the beginning is from single Quantities taken once.

Since then the Number of possible Changes is a geometrical Progression, whose first or smallest Term is n^1, the greatest n^n, and the Denominator *n*; it will be $= (n^{n+1} - n) : (n - 1.)$

Suppose, *v. g.* $n = 4$. the Number of possible Changes $(4^5 - 4) : 4 - 1 = 1020 : 3 = 340$. Suppose, again, $n = 24$, the Number of possible Changes will be $(24^{25} - 24) : (24 - 1) = 3200965864440681898677795534827260 0 : 23 = 139172428888725299942512849340220 0$. In so many various manners, therefore, may the 24 Letters of the Alphabet be varied and *combined* among themselves.

F. *Truchet*, in the *Memoirs of the French Academy*, shews, that two square Pieces, each divided diagonally by two Colours, may be arranged and *combin'd* 64 different ways, so as to form so many different Kinds of Chequer-work; which appears surprizing enough, when one considers that two Letters, or Figures, can only be *combined* twice.

This Note mayy be of use to Masons, Paviours, *&c.* See PAVEMENT.

COMBING *of Wool*, in Commerce, the drawing, or passing it across the Teeth of a kind of Card, called a *Comb*, to dispose it for spinning. See WOOL, CLOTH, SPINNING, *&c.*

COMBS. See HONEY-COMBS.

COMBUST, in Astronomy. When a Planet is not above 8 Degrees and 30 Minutes distant from the Sun, either before or after him, it is said to be *Combust*, or in *Combustion*.

COME. The small Fibres or Tails of Malt, upon it first shooting forth is thus called. See MALT.

COMEDY, in its proper Sense, a Dramatic Piece, representing some agreeable and diverting Transaction: or, it is an allegorical Representation of something in private Life; for the Amusement and Instruction of the Spectators. See DRAMA.

In this Sense, *Comedy* is oppos'd to Tragedy; the Subjects whereof are grave, and violent; and the Persons of the first Rank. See TRAGEDY.

Scaliger defines *Comedy* a Dramatic Poem, very busy, pleasant in the Conclusion, and writ in a popular Style.

Aristotle calls it an *Imitation of the worst*, or, rather, *of the lowest Class of Persons, by way of ridicule*: This Definition *Corneille* finds fault with, and maintains, that the Actions of Kings themselves may enter *Comedy*; provided they be such as are not very momentous, nor attended with any considerable danger. He adds, that a Poem wherein the greatest Peril is the Loss of a Mistress, has no right to any higher Appellation than that of *Comedy*: But then he makes a Distinction in *Comedies*, and dignifies those where great Personages are introduc'd, with the Epithet of *Heroic Comedies*, to distinguish them from ordinary ones.

Mr. *Congreve* seems pretty much of the same Sentiment: he understands *Aristotle*'s Definition of the *worst* Men; on which bottom, 'tis sufficient to constitute a *Comedy*, that the Action represented be that of some ill Man brought on the Stage to be expos'd.

M. *Dacier* is of a contrary Opinion: He maintains, that *Comedy* allows of nothing grave, or serious, unless it be turn'd to ridicule; and that Raillery and Ridicule are its only proper and genuine Characteristics: In which Opinion he is warmly seconded by Mr. *Dennis*.

Thus different are Critics and Comic Authors on the Nature of *Comedy*: some distinguishing it from Tragedy by the low-

lowness of the Subject; others by the ridiculous Light it is set in.

The accurate F. *Bossu* fixes the Notion of *Comedy* much better: according to that excellent Critic, *Comedy* differs from Tragedy in this, that the Comic Writer invents both the Names of his Persons, and the Actions he presents; whereas the Tragic Writers only invent the latter; the former they are to take from History.

Upon the whole, *Comedy* may be defined an Image, or Representation of the ordinary Life of Men: it exhibits their common Actions and Passions; exposes, and ridicules their Failings, to preserve the Spectators from 'em, or to correct 'em. *Cicero* defines it the Imitation of Life, the Mirror of Custom, and the Image of Truth.

There is a Dispute among the Critics, whether *Comedy* be a Poem, or a mere Conversation. They who maintain the latter, do it on the foot of this general Opinion, that a Poem is a Discourse in Verse: F. *Bossu* insists on the former, and shews, that as *Comedy* has the Fable, or Allegory, it has every thing essential to Poetry. See POEM, and FABLE.

Comedy and Tragedy were originally one and the same Thing: *Their common Origin see under* TRAGEDY.

M. *Boileau* says, *Comedy* took its rise at *Athens*, from the happy Issues or Conclusions of Tragedies. On this Principle, the Catastrophe should have been the proper Criterion, or distinguishing Mark between Tragedy and *Comedy*; and all other differences only accedental.

Des succès fortunez du spectacle tragique
Dans Athènes naquit la Comédie *antique.*

After the Grave and Serious became separated from the Ridiculous, and Tragedy and *Comedy* became two distinct Arts; People applied themselves to cultivate the former, and neglected the latter: So that *Comedy* continued in its Infancy, with little Improvements, while Tragedy grew up to a perfect Art: this, once arrived at its height, they began to think of cultivating *Comedy*.

With regard to the various Changes and Revolutions *Comedy* has undergone, it is commonly distinguish'd into three Kinds, *viz.* the *Antient*, wherein there was nothing feign'd; the *Mean*, where the Subject was real, but the Names fictitious; the *New*, where both Names and Things are fictitious.

The *Antient* was that first in use, when the supreme Power was in the Hands of the People; and when, on that account, the Poets were at their full liberty to say what they pleas'd, and of whom they pleas'd; by Name to rail at People in Authority, and openly charge Magistrates with Crimes; sparing no Age, Sex, or Quality.

This is very observable in the *Frogs*, and the *Clouds* of of *Aristophanes*; where it is to be noted, that tho the railing Part was occasionally distributed among all the Actors, yet the chief was laid on the Chorus.

When the *Athenian* Liberties became sunk up in the Tyranny of a few, it was no longer safe for the Poets to use their old License; Men of Office being now to be skreen'd from reproach. The Chorus, therefore, became useless, and was therefore dropp'd; and thus commenc'd what we call *Comœdia media*, μεση, or the *Mean Comedy*. See CHORUS.

Under this, the Poets were not allow'd to name the Persons; and therefore Names were to be invented: but then the Persons were so well pointed out, that 'twas no difficult matter to know 'em.

At length, however, they were oblig'd to press even this License: and this Reform gave occasion to the *New Comedy*; which only brought upon the Stage feign'd Adventures, and imaginary Names.

This last Kind alone was receiv'd among the *Romans*; who yet made a new Subdivision thereof, into *Antient*, *Mean*, and *New*; according to the various Periods of the Commonwealth. Among the antient *Comedies* were rank'd those of *Livius Andronicus*; among the *Mean*, those of *Pacuvius*; and among the *New* ones those of *Terence*.

Comedy, as well as Tragedy, has its *Essential*, and its *Integrant* Parts.

Its Essential Parts, in the Language of the Antients, are the *Protasis*, *Epitasis*, *Catastasis*, and *Catastrophe*.

The *Protasis* is the beginning, or opening; where the Subject is just enter'd upon, the Character of the Persons shewn, and the Interest, or part, each has in the Action. See PROTASIS.

In the *Epitasis*, the Intrigues begin: they are carry'd on, and heighten'd in the *Catastasis*; and unravell'd in the *Catastrope*. See EPITASIS, CATASTROPHE, &c.

The Integrant Parts are the five *Acts* into which the *Comedy* is divided, agreeable to that Precept of *Horace*;

Neve minor quinto neu sit productior Actu.

The Acts are divided into *Scenes*; the Number whereof is not fix'd, either by Reason or Experience, but depends on the Things to be done in each Act, and the Number of Persons to be employ'd. See ACT, SCENE, &c. see also MANNERS, HUMOUR, &c.

Among the antient *Romans*, *Comedies* were distinguish'd according to the Quality of the Persons represented, and the Dress they wore, into *Togatæ*, *Prætextæ*, *Trabeatæ*, and *Tabernariæ*; which last were those where the Scene lay in Colleges, or among People of the lowest Rank, agreeing pretty nearly with our Farces.

In the Representation, *Comedy* was distinguish'd from the Tragedy, by the *Sock* wore in the former, and the *Buskin* in the latter. See SOCK, and BUSKIN.

Among us, *Comedy* is distinguish'd from Farce, in that the former represents Nature as she is; the other distorts or overcharges her. They both paint from the Life, but with different Views: the one to make Nature known, the other to make her ridiculous. See FARCE.

Scaliger derives the Word *Comedy* from κώμαι, *Villages*, or *Conventicles of Peasants*; by reason, says *Varro*, the *Attic* Youth us'd to travel thro' the Country, and pick up Money by their *Comic* Representations; or from απὸ τὸν κωμωδεῖον, *i. e. viculus*; because the Scene was laid in ordinary Houses: whereas, in Tragedy, it lay in Palaces, and the Houses of the Great.

COMET, popularly call'd a *blazing Star*, a heavenly Body, rising suddenly, and again disappearing, and during the Time of its Appearance, moving in its proper Orbit, like a Planet. See STAR, and PLANET.

Comets have this to distinguish them from the other *Stars*, that they are usually attended with a long Train, or Tail of Light, always opposite to the Sun, and which is of the fainter Lustre, the further it is from the Body. Hence arises a popular division of *Comets* into three Kinds, *viz. bearded*, *tail'd*, and *hairy Comets*; tho, in effect, this division rather relates to the several Circumstances of the same *Comet*, than to the Phænomena of several.

Thus, when the *Comet* is Eastward of the Sun, and moves from it, the *Comet* is said to be *bearded*, *barbatus*; because the Light marches before it, in manner of a Beard.

When the Light is Westward of the Sun, and sets after it, the *Comet* is said to be *tailed*, *caudatus*; because the Train follows it, in manner of a Tail.

Lastly, when the *Comet* and the Sun are diametrically opposite, (the Earth between them) the Train is hid behind the Body of the *Comet*, excepting a little that appears around it, in form of a Border of Hair, hence called *Crinitus*.

Nature of COMETS.

As to the Nature of *Comets*, the unfrequency of their appearing, together with the seeming Irregularities of their Phænomena, have left Philosophers much in the dark: Those who liv'd before *Aristotle*, accounted for 'em by supposing the heavenly Spaces full of an infinite Number of Stars; and many of these too remote, or too small to have ever come under the Notice of Astronomers: These invisible Stars, they further suppos'd to move by their own proper Motion every way; finishing their Courses in very unequal Times. Now, a *Comet*, according to them, was a vast heap or assemblage of these little Stars meeting together, by reason of the Inequality of their Motions, and uniting into a visible Mass; which must again disappear, as those Stars separate, and each proceed in its Course.

But how these Stars should thus meet, coalesce, and form a Body, which in all Positions of the Sun should resemble a Tail, and again separate, is a Mystery.

This Opinion, therefore, *Aristotle* easily overturn'd; substituting another in its stead: According to him, *Comets* were only a kind of transient Fires, or Meteors, consisting of Exhalations rais'd to the upper Region of the Air, and there set on fire; far below the Moon's Course.

But neither is this Hypothesis more just than the other: For on this Principle, the Light of the *Comet* being independent of the Sun, would be dispers'd every way alike, without any appearance of a Train, or Tail, which is contrary to the Phænomena. Besides, that the modern Astronomers, who have measur'd the distance between the *Comets* and the Earth, find that the *Comets* have no sensible Parallax; which could not be, were they not much more remote than the Moon, whose Parallax is sensible. See PARALLAX.

Hevelius from a great Number of Observations, proposes it as his Opinion, that the *Comets*, like the Solar *Maculæ* or Spots, which they pretty much resemble, are form'd and condens'd out of grosser Exhalations of his Body. In which Notion he agrees nearly with *Kepler*, who maintains, that *Comets* are generated in the Æther in vast Numbers, like Fishes in the Ocean; tho they don't all become visible, either because of their smallness, or because they lay a long time under the Horizon.

But Sir *I. Newton* has shewn the Fallacy of this Hypothesis, by proving that the *Comet* of 1680, in its passage thro' the Neighbourhood of the Sun, would have been dissipated, had it consisted of Exhalations of the Sun and Planets:

nets: For the Heat of the Sun, 'tis allow'd, is as the Density of his Rays, *i. e.* reciprocally as the Squares of the Distances of Places from the Sun: Wherefore, since the Distance of that *Comet* in its Perihelion, *December* the 8th, was observ'd to be to the Distance of the Earth from the Sun, nearly as 6 to 1000; the Sun's heat in the *Comet*, at that time, was to his heat with us at *Midsummer*, as 1000000 to 36, or 28000 to 1.

And again, finding by Experiment, that the Heat of boiling Water, is little more than three times the heat of our dry Earth, when expos'd to the *Midsummer's* Sun; and assuming the heat of red-hot Iron to be about three or four times as great as that of boiling Water: he concludes, that the heat of the dry'd Earth, or body of the *Comet* in its Perihelion, must be near 2000 times as great as that of red-hot Iron.

Such an immense heat once acquir'd in its Perihelion, the *Comet* must be a long time in cooling again. The same Author computes, that a Globe of red-hot Iron, of the Dimensions of our Earth, would scarce be cool in 50000 Years. If then the *Comet* be suppos'd to cool 100 times as fast as red-hot Iron; yet, since its Heat was 2000 times greater, supposing it of the bigness of the Earth, it would not be cool in a Million of Years.

James Bernoulli, in his *Systema Cometarum*, supposes some primary Planet, revolving round the Sun in the Space of four Years and 157 Days; and at the distance, from his Body, of 2583 Semidiameters of the *magnus Orbis*: This Planet, he concludes, either from its vast distance, or smallness, to be invisible to us; but, however, to have, at various Distances from him, several Satellites moving round him, and sometimes descending as low as the Orbit of *Saturn*; and that these becoming visible to us, when in their *Perigæum*, are what we call *Comets*.

Des Cartes advances another Opinion: He conjectures that *Comets* are only Stars, formerly fix'd, like the rest, in the Heavens; but which, becoming by degrees cover'd with *Maculæ*, or Spots, and at length wholly robb'd of their Light, cannot keep their place, but are carried off by the Vortices of the circumjacent Stars; and, in proportion to their Magnitude and Solidity, mov'd in such manner, as to be brought nearer the Orb of *Saturn*; and thus coming within reach of the Sun's Light, render'd visible. See CARTESIANISM.

But the Vanity of all these Hypotheses abundantly appears from the Phænomena of *Comets*; the chief of which we shall enumerate: as being the Test by which all Theories are to be tried.

First, then, those *Comets* which move according to the Order of the Signs, do all, a little before they disappear, either advances lowlier than usual, or else go retrograde, if the Earth be between them and the Sun; and more swiftly, if the Earth be situate in a contrary Part: On the contrary, those which proceed contrary to the Order of the Signs, proceed more swiftly than usual, if the Earth be between them and the Sun; and more slowly, or go retrograde, when the Earth is in a contrary Part.

2dly, So long as their Velocity is encreas'd, they move, nearly, in great Circles; but towards the end of their Course, deviate from those Circles; and as often as the Earth proceeds one way, they go the contrary way.

3dly, They move in Ellipsis's, having one of their *Foci* in the Centre of the Sun; and by Radii drawn to the Sun, describe Areas proportionable to the Times.

4thly, The Light of their Bodies, or *Nuclei*, increases in their Recess from the Earth towards the Sun; and, on the contrary, decreases in their Recess from the Sun towards the Earth.

5thly, The Tails appear the largest and brightest, immediately after their Transit thro' the Region of the Sun.

6thly, The Tails always decline from a just opposition to the Sun towards those Parts which the Bodies, or *Nuclei* pass over, in their progress thro' their Orbits.

7thly, This Declination, *cæteris paribus*, is the smallest, when the Heads, or *Nuclei* approach nearest the Sun: and less, still, near the *Nucleus* of the *Comet* than towards the Extremity of the Tail.

8thly, The Tails are somewhat brighter, and more distinctly defined in their convex than in their concave Part.

9thly, The Tails always appear broader at their upper Extreme than near the Centre of the *Comet*.

10thly, The Tails are transparent, and the smallest Stars appear thro' 'em.

These are the chief Phænomena of *Comets*; which, how ill they consist with the wild Notions of the Antients, and the weak Conjectures of most of the Moderns, is pretty evident. Indeed, there were some, *Pliny* tells us, among the Antients, who 'had juster Notions, who took these Stars 'to be perpetual, and believ'd they moved in their proper 'Orbs; but were never seen unless when left by the Sun:' And more fully *Seneca*, *Quæst. Nat.* Lib. VII. 'I am not 'of the common Opinion, nor do I take a *Comet* to be a 'sudden Fire, but esteem it among the Eternal Works of 'Nature.——*Quid autem miramur Cometas, tam rarum mundi spectaculum nondum teneri legibus certis, nec initia illorum finesque notescere, quorum ex ingentibus intervallis recursus est?——Veniet Tempus quo ista quæ nunc latent, in lucem dies extrahat & longioris Ævi diligentia. Veniet Tempus quo posteri nostri tam aperta nos nescisse mirentur.——Erit qui demonstret aliquando, in quibus Cometæ partibus errent; cur tam seducti a cæteris eant, quanti qualesque sint*——

This Prediction we have seen accomplish'd in our Days, by the great Sir *I. Newton*; whose Doctrine is as follows.

The *Comets* are compact, solid, fix'd, and durable Bodies; in one word, a kind of Planets; which move in very oblique Orbits, every way with the greatest freedom; persevering in their Motions, even against the Course and Direction of the Planets: And their Tail is a very thin, slender Vapour, emitted by the Head, or *Nucleus* of the *Comet*, ignited or heated by the Sun.

This at once solves all the Phænomena: For 1st, 'Tis evi-'dent, that those which proceed according to the Order of the 'Signs, a little before they disappear, must move more slowly, 'or appear retrograde, if the Earth be betwixt them and the 'Sun; and swifter, if the Earth be in a contrary Part: on the 'contrary, those proceeding against the Order of the Signs, '&c.' For since their Course is not among the fix'd Stars, but among the Planets; as the Motion of the Earth either conspires with 'em, or goes against 'em; their Appearance, with regard to the Earth, must be changed; and, like the Planets, they must sometimes appear swifter, sometimes slower, and sometimes retrograde. See DIRECTION, RETROGRADATION, &c.

2dly, 'When the *Comets* move the swiftest, they must 'proceed in strait Lines, but in the end of their Course de-'cline, &c.' Because in the end of their Course, when they recede almost directly from the Sun, that part of the apparent Motion which arises from the Parallax, must bear a greater proportion to the whole apparent Motion.

3dly, 'The *Comets* must move in Ellipsis's, having one of 'their *Foci* in the Centre of the Sun.' Because they don't wander precariously from one fictitious Vortex to another; but, making a part of the solar System, return perpetually, and run a constant round. See ORBIT.

Hence, their elliptic Orbits being very long and eccentric, they become invisible, when in that Part most remote from the Sun.

From considering the Curvity of the Paths of *Comets*, Sir *I.* concludes, that when they disappear, they are much beyond the Orb of *Jupiter*; and that in their Perihelion they frequently descend below the Orbits of *Mars* and the inferior Planets.

4thly, 'The Light of their *Nuclei* must increase in their 'Recess from the Sun, and *vice versa*:' Because, as they are in the Regions of the Planets, their Access toward the Sun, bears a considerable proportion to their whole distance.

From Observations of the *Comet* of 1680, Sir *I. Newton* found that the Vapour in the Extremity of the Tail, *Jan.* 25. began to ascend from the Head before *December* the 11th; and had therefore spent more than 45 Days in its Ascent: but that all the Tail which appear'd *December* 10. ascended in the Space of those two Days, then just past, since its Perihelion. The Vapour, therefore, at the beginning, when the *Comet* was near the Sun, ascended prodigiously swift; and afterwards continu'd to ascend with a Motion retarded by the Gravity of the Particles; and by that Ascent increas'd the length of the Tails: But the Tail, notwithstanding its length, consisted almost wholly of Vapours, which had ascended from the Time of the Perihelion; and the Vapour which ascended first, and compos'd the Extreme of the Tail, did not vanish, till it was too far from the Sun to be illumin'd by him, and off us to be visible. Hence, also, the Tails of *Comets* that are shorter, do not ascend with a quick and continual Motion from the Head, and then presently disappear; but are permanent Columns of Vapours and Exhalations, gather'd from the Head by a very gentle Motion, and in a great space of time; which yet, by participating of that Motion of their Heads they had at the beginning, continue easily to move along with their Heads thro' the celestial Regions: whence also the Vacuity, of those Regions is argued. See VACUUM.

5thly, 'Their Tails must appear the largest and brightest 'immediately after their Transit thro' the Region of the 'Sun:' Because, then, their Heads being the most heated, will emit the most Vapours.

From the Light of the *Nucleus*, or apparent Star, we infer their Vicinity to the Earth, and that they are by no means in the Region of the Fix'd Stars, as some have imagin'd; since in that case, their Heads would be no more illumin'd by the Sun, than the Planets are by the Fix'd Stars.

6thly, 'The Tails must still decline from a strict opposi-'tion to the Sun, towards those Parts which the Heads pass 'over, in their progress thro' their Orbits:' Because, all Smoke, or Vapour emitted from a Body in Motion, tends up-

wards obliquely, ſtill receding from that Part towards which the ſmoaking Body proceeds.

7thly, 'That Declination will be ſtill the leaſt near the 'Nucleus of the Comet; and when the Comet is neareſt the 'Sun:' Becauſe the Vapour aſcends more ſwiftly near the Head of the Comet, than in the higher Extremity of its Tail; and when the Comet is at a leſs diſtance from the Sun, than when at a greater.

8thly, 'The Tail is brighter, and better defin'd in its 'convex Part, than in its concave:' Becauſe the Vapour in the convex Part, which goes firſt, being ſomewhat nearer and denſer, reflects the Light more copiouſly.

9thly, 'The Tail muſt appear broader towards the high-'er Extremity of the Comet, than towards the Head:' Becauſe, the Vapour in a free Space perpetually rarefies and dilates.

10thly, 'The Tails muſt be tranſparent:' Becauſe conſiſting of infinitely thin Vapour, &c.

Thus accurately does the Hypotheſis tally to the Phænomena.

Phaſes of Comets.

The *Nuclei*, which we alſo occaſionally call the *Heads* and *Bodies* of *Comets*, view'd thro' a Teleſcope, ſhew a very different Face from thoſe of the Fix'd Stars, or Planets. *Sturmius* tells us, that obſerving the *Comet* of 1680 with a Teleſcope, it appear'd like a Coal dimly glowing, or a rude Maſs of Matter illumin'd with a duſky fumid Light, leſs ſenſible at the Extremes than in the middle; rather than as a Star which appears with a round Diſk, and a vivid Light.

Hevelius obſerv'd of the *Comet* of 1661, that its *Nucleus* was of a yellowiſh Colour, bright and conſpicuous, but without any glittering Light: in the middle was a denſe ruddy *Nucleus*, almoſt equal to *Jupiter*, incompaſs'd with a much fainter thinner Matter. 5 *Feb.* its Head was ſomewhat bigger and brighter, of a gold-colour; but its Light more duſky than the reſt of the Stars: Here, the *Nucleus* appear'd divided into ſeveral Parts. 6 *Feb.* the Diſk was leſſen'd; the *Nuclei* ſtill exiſted, tho leſs than before: one of 'em, on the lower Part of the Diſk, on the left, much denſer and brighter than the reſt; its Body round, and repreſenting a very lucid little Star: The *Nuclei* ſtill incompaſs'd with another kind of Matter. 10 *Feb.* the Head ſomewhat more obſcure, and the *Nuclei* more confuſed, but brighter at top than bottom. 13 *Feb.* the Head diminiſh'd much, both in Magnitude and brightneſs. 2 *March* its roundneſs a little impair'd, its Edges lacerated, &c. 28 *March* very pale and exceeding thin; its Matter much diſpers'd; and no diſtinct *Nucleus* at all appearing.

Weigelius, who ſaw the *Comet* of 1664, the Moon, and a little Cloud illumin'd by the Sun at the ſame time; obſerv'd, that the Moon, thro' the Teleſcope, appear'd of a continued luminous Surface; but the *Comet* very different; being perfectly like the little Cloud in the Horizon, illumin'd by the Sun. From theſe Obſervations it was, that *Hevelius* concluded *Comets* to be like *Maculæ*, or Spots form'd out of the ſolar Exhalations.

The Length of the Tails of *Comets* is various: That of 1680, according to *Sturmius*, about the 20th of *November*, was but ſmall, at moſt not exceeding 20 Degrees in length: in a little time it grew to a length of 60 Degrees; after which it dwindled very ſenſibly.

Formation of the Tails of Comets.

Sir *Iſaac Newton* ſhews, that the Atmoſpheres of *Comets* will furniſh Vapour ſufficient to form their Tails: This he argues from that wonderful Rarefaction obſerv'd in our Air, at a diſtance from the Earth: a Cubic Inch of common Air, at the diſtance of half the Earth's Diameter, or 4000 Miles, would expand it ſelf ſo as to fill a ſpace larger than the whole Region of the Stars. Since then the *Coma*, or Atmoſphere of a *Comet* is ten times higher than the Surface of the *Nucleus*, counting from the Centre thereof; the Tail, aſcending much higher, muſt needs be immenſely rare: ſo that 'tis no wonder the Stars ſhould be viſible thro' it.

Now, the Aſcent of Vapours into the Tail of the *Comet*, he ſuppoſes occaſion'd by the Rarefaction of the Matter of the Atmoſphere at the Time of the Perihelion. Smoke, 'tis obſerv'd, aſcends the Chimney by the Impulſe of the Air wherein it floats; and Air, rarefy'd by heat, aſcends by the Diminution of its ſpecific Gravity, taking up the Smoke along with it: Why then ſhould not the Tail of a *Comet* be ſuppos'd to be rais'd after the ſame manner by the Sun? For the Sun-Beams don't act on the Mediums they paſs thro', any otherwiſe than by Reflection and Refraction.

The reflecting Particles, then, being warm'd by the Action, will again warm the Æther wherewith they are compounded; and this, rarefy'd by the Heat, will have its ſpecific Gravity, whereby it before tended to deſcend, diminiſh'd by the Rarefaction; ſo as to aſcend, and to carry along with it thoſe reflecting Particles, whereof the Tail of the *Comet* is compos'd.

This Aſcent of the Vapours will be promoted by their circular Motion round the Sun; by means whereof, they will endeavour to recede from the Sun, while the Sun's Atmoſphere, and the other Matters in the celeſtial Spaces, are either at reſt, or nearly ſo; as having no Motion but what they receive from the Sun's Circumrotation.

Thus are the Vapours rais'd into the Tails of *Comets* in the neighbourhood of the Sun, where the Orbits are moſt curve; and where the *Comets* being within the denſer Atmoſphere of the Sun, have their Tails of the greateſt length.

The Tails thus produced, by preſerving that Motion, and at the ſame time gravitating towards the Sun, will move round his Body in Ellipſes, in like manner as their Heads; and by this means, will ever accompany, and freely adhere to their Head. In effect, the Gravitation of the Vapours towards the Sun, will no more occaſion the Tails of the *Comets* to forſake their Heads, and fall down towards the Sun, than the Gravitation of their Heads will occaſion them to fall off from their Tails: but by their common Gravitation, they will either fall down together to the Sun, or be together ſuſpended, or retarded. This Gravitation, therefore, does not at all hinder, but that the Heads and Tails of *Comets* may receive and retain any poſition towards each other, which either the abovemention'd Cauſes, or any other, may occaſion.

The Tails, therefore, thus produced in the Perihelion of *Comets*, will go off along with their Head into remote Regions; and either return thence, together with the *Comets*, after a long Series of Years; or, rather, be there loſt, and vaniſh by little and little, and the *Comet* be left bare; till at its return, deſcending towards the Sun, ſome little ſhort Tails be gradually and ſlowly produc'd from the Heads; which afterwards, in the Perihelion, deſcending down into the Sun's Atmoſphere, will be immenſely increas'd.

The Vapours thus dilated, rarefy'd, and diffus'd thro' all the celeſtial Regions, the ſame Author obſerves, may probably, by little and little, by means of their own Gravity, be attracted down to the Planets, and become intermingled with their Atmoſpheres.

He adds, that for the Conſervation of the Water, and Moiſture of the Planets, *Comets* ſeem abſolutely requiſite; from whoſe condens'd Vapours and Exhalations, all that Moiſture which is ſpent in Vegetations and Putrefactions, and turn'd into dry Earth, &c. may be reſupply'd and recruited. For all Vegetables grow, and increaſe wholly from Fluids; and, again, as to their greateſt part, turn, by Putrefaction, into Earth again; an earthy Slime being perpetually precipitated to the bottom of putrefying Liquors. Hence, the quantity of dry Earth muſt continually increaſe, and the Moiſture of the Globe decreaſe, and at laſt be quite evaporated; if they have not a continual Supply from ſome part or other of the Univerſe. And I ſuſpect, adds our great Author, that the Spirit, which makes the fineſt, ſubtileſt, and beſt part of our Air, and which is abſolutely requiſite for the Life and Being of all Things, comes principally from the *Comets*.

On this Principle, there ſeems to be ſome Foundation for the popular Opinion of Preſages from *Comets*: ſince the Tail of a *Comet* thus intermingled with our Atmoſphere may produce Changes very ſenſible in Animal and Vegetable Beings.

M. *Facio* has ſuggeſted, that ſome of the *Comets* having their Nodes ſo very near the annual Orbit of the Earth; ſhould the Earth happen to be found in that Part next the Node, at the Time of a *Comet*'s paſſing by; as the apparent Motion of the *Comet*, will be incredibly ſwift, ſo its Parallax will become very ſenſible; and the Proportion thereof to that of the Sun will be given: whence, ſuch Tranſits of *Comets* will afford the beſt Means of determining the diſtance of the Earth and Sun.

The *Comet* of 1472, *v.g.* had a Parallax above twenty times greater than the Sun's: and if that of 1618 had come down in the beginning of *March* to its deſcending Node, it would have been much nearer the Earth, and its Parallax much more notable. But, hitherto, none has threaten'd the Earth with a nearer Appulſe than that of 1680: For, by Calculation, Dr. *Halley* finds, that *November* 11, 1 H. 6 Min. P. M. that *Comet* was not above one Semidiameter of the Earth, to the Northwards of the Way of the Earth; at which time, had the Earth been in that part of its Orbit, the *Comet* would have had a Parallax equal to that of the Moon: What might have been the conſequence of ſo near an Appulſe, a Contact, or laſtly, a Shock of the celeſtial Bodies?

Motion of Comets.

If their Paths be ſuppoſed directly parabolic, as ſome have imagin'd, it would follow, that being impell'd towards the Sun by a centripetal Force, they deſcend as from Spaces infinitely diſtant; and by their Falls acquire ſuch a Velocity, as that they may again run off into the remoteſt Regions; ſtill moving upwards, with ſuch a perpetual Tendency as never to return. But the frequency of their Appearance, and their degree of Velocity, which does not exceed what they might acquire by their Gravity towards the Sun; ſeem to put it paſt doubt that they move, Planet-like, in elliptic Orbits, tho thoſe exceedingly eccentric; and ſo return again, tho after very long Periods. See Ellipsis.

Apollonius

Apollonius Myndianus was the first who took *Comets* for regular Stars; and ventur'd to foretel, that one day the Periods and Laws of their Motion would be discover'd.

Astronomers, however, are still divided on that Head: *Newton*, *Flamstead*, *Halley*, and the *English* Astronomers, &c. seem satisfy'd of the Return of *Comets*: *Cassini*, and others of the *French*, think it highly probable; *de la Hire*, and others, oppose it.

Those on the affirmative Side, suppose the *Comets* to describe Circles prodigiously eccentric, insomuch as we can only see 'em in a very small part of their Revolution: Out of this, they are lost in the immense Spaces; hid not only from our Eyes, but our Telescopes. That little part of their Circle next us, M. *Cassini*, &c. have found to pass between the Orbits of *Venus* and *Mars*.

For the Reasons of the Return of Comets, M. *Cassini* gives these that follow.

1. In considering the Course of the *Comets*, with regard to the Fix'd Stars, they are found to keep a considerable time in the Arch of a great Circle, *i. e.* a Circle whose Plane passes thro' the Centre of the Earth: Indeed, they deviate a little from it, chiefly towards the end of their Appearance; but this Deviation is common to them with the Planets.

2. *Comets*, as well as Planets, appear to move so much the faster as they are nearer the Earth; and when they are at equal Distances from their Perigee, their Velocities are nearly the same.

By subtracting from their Motion the apparent Inequality of Velocity occasion'd by their different distance from the Earth, their equal Motion might be found; but we should not be certain this Motion were their true one; in regard they might have considerable Inequalities, not distinguishable in that small Part of their Orbit visible to us. 'Tis, indeed, probable, their real Motion, as well as that of the Planets, is unequal in it self: and hence we have a Reason why the Observations made during the Appearance of a *Comet* cannot give the just Period of their Revolution. See Period.

3. There are no two different Planets whose Orbit cuts the Eclyptic in the same Angle, whose Nodes are in the same Points of the Eclyptic, and whose apparent Velocity in their Perigee is the same: Of consequence, two *Comets* seen at different Times, yet agreeing in all those three Circumstances, can only be one and the same *Comet*.

And this were the *Comets* of 1577 and 1680 observ'd to do; and those of 1652, and 1698: Not that this exact agreement in these Circumstances is absolutely necessary to determine 'em the same *Comet*. M. *Cassini* finds the Moon her self irregular in 'em all: Accordingly, he is of Opinion, there are several which disagree herein, yet may be accounted the same.

The great Objections against the Return of Comets, are, the rarity of their Appearance, with regard to the number of Revolutions assign'd to 'em.

In 1702 was a *Comet*, or rather the Tail of one, seen at *Rome*, which M. *Cassini* takes to be the same with that observ'd by *Aristotle*, and that since seen in 1668; which would imply its Period to be 34 Years. Now, it may seem strange, that a Star which has so short a Revolution, and of consequence such frequent Returns, should be so seldom seen. Again, in *April* of the same Year, 1702, a *Comet* was observ'd by Mess. *Bianchini* and *Maraldi*, supposed by the latter to be the same with that of 1664, both by reason of its Motion, Velocity, and Direction. M. *de la Hire* took it to have some relation to another he had observ'd in 1698; which M. *Cassini* refers to that of 1652: On this Supposition its Period appears to be 43 Months, and the Number of Revolutions between 1652 and 1698, fourteen: But 'tis hard to suppose, that in this Age, wherein the Heavens are so narrowly watch'd, a Star should make 14 Revolutions unperceiv'd: especially such a Star as this, which might appear above a Month together; and of consequence be frequently disengag'd from the Crepuscula.

For this, reason M. *Cassini* is very reserv'd in maintaining the Hypothesis of the Return of *Comets*, and only proposes those for Planets, where the Motions are easy and simple, and are solv'd without straining, or allowing many Irregularities.

M. *de la Hire* proposes one general Difficulty against the whole System of the Return of *Comets*, which would seem to hinder any *Comet* from being a Planet; and 'tis this: that, by the Disposition necessarily given to their Courses, they should appear as small at first as at last; and always increase, till they arrive at their greatest Proximity to the Earth: or, if they should chance not to be observ'd as soon as they become visible, for want of Attention thereto; at least, 'tis impossible but they must frequently shew themselves ere they have arriv'd at their full Magnitude and Brightness: But he adds, that none were ever yet observ'd till they had arrived at it.

But the Appearance of a *Comet* in this present Month of *October* 1723, while yet at a great distance, so as to be too small and dim to be view'd without a Telescope, may serve to remove this Obstacle, and set the *Comets*, still, on the same footing with the Planets.

Sir *Isaac Newton* supposes, that as those Planets which are nearest the Sun, and revolve in the least Orbits, are the smallest; so among the *Comets*, such as in their Perihelion come nearest the Sun, are the smallest, and revolve in lesser Orbits.

Dr. *Halley* has given us a Table of the Astronomical Elements of all the *Comets* that have been yet observ'd with due care; whereby, whenever a new *Comet* shall appear, it may be determin'd, by comparing it therewith, whether it be any of those which have yet appear'd; and consequently its Period, and the Axis of its Orbit determin'd, and its Return foretold.

For there are many things in the *Comet* of 1531, observ'd by *Appian*, which intimate its being the same with that of 1687, observ'd by *Kepler* and *Longomontanus*; and which Dr. *Halley* himself again observ'd in 1682. All the Elements agree, and there is nothing contradicts the Opinion, but that inequality in the periodic Revolution; which, however, he thinks, is no more than may be accounted for from physical Causes: no more, in effect, than is observ'd in *Saturn*; the Motion of which Planet is so disturb'd by the rest, especially *Jupiter*, that its Period is uncertain for several Days together: To what Errors then may not a *Comet* be liable, which rises almost four times the height of *Saturn*; and whose Velocity, if but a little increas'd, would change its Elliptic Orb into a parabolic one?

What further confirms the Identity is the Appearance of another *Comet* in the Summer of 1456; which, tho observ'd by none with accuracy, yet by its Period, and the manner of its Transit, he concludes it to be the same: and thence ventures to foretel its return in the Year 1758. See Solar *System, and the Plate it refers to; where the Orbits of the several* Comets *are delineated, and their Periods, so many of them as are known, express'd.*

To determine the Place and Course of a Comet.

Observe the distance of the *Comet* from two Fix'd Stars, whose Longitudes and Latitudes are known: from the Distances thus found, calculate the Place of the *Comet* by Trigonometry, after the manner deliver'd under Planet.

By repeating the Observations and Operations for several Days successively, the Course of the *Comet* will be had.

To determine the Course of a Comet *mechanically, and without any Apparatus of Instruments.* The following ingenious Method, by a Thread, we owe to *Longomontanus*: Observe four Stars round the *Comet*, such, as that the *Comet* may be in the Intersection of the right Lines that join the two opposite Stars; which is easily found, by means of a Thread plac'd before the Eye, and extended over against the Stars and *Comet*.

Suppose, *v. g.* the *Comet*'s place in the Heavens A, (Tab. *Astronomy*, Fig. 23.) between the four Stars, B, C, D, E; where the Line joining the Stars B and D, passes thro' the Body of the *Comet*; and so of the Lines passing thro' C and E.

On a Globe, wherein these four Stars are found, extend a Thread thro' B and D, and another thro' C and E; the Point of Intersection will give the place of the *Comet*. This Practice being repeated for several Days, the *Comets* Course will be had on the Globe; which Course will be found to be a great Circle: from any two Points whereof, it will be easy to find its Inclination to the Eclyptic, and the Place of the Nodes; only by observing where a Thread stretch'd thro' the two Points cuts the Eclyptic.

To determine the Parallax of a Comet. See Parallax.

COMITIA, an Assembly of the *Roman* People, either in the *Comitium*, or *Campus Martius*; for the Election of Magistrates, or for consulting on the important Affairs of the Republic. See Campus *Martius*, &c.

There were certain Days fix'd for these Assemblies, call'd *Dies Comitiales*; mark'd with a c in the Calendar of *Julius Cæsar*.

Comitial Assemblies held for the Election of Consuls, were called *Consular Comitia*: in like manner, the other *Comitia* took their Name from the Officer to be created; whether a Tribune, a Pontiff, Ædile, &c.

There were three Kinds of *Comitia*, viz. *Curiata*, *Centuriata*, and *Tributa*; so distinguish'd, from the manner wherein the People voted, and gave their Suffrages, *viz.* by *Curiæ* or Parishes, Tribes or Centuries. See Curiæ, Tribe, &c.

Authors make the difference between *Comitia* and *Concilia* to consist in this; that in the former the *whole* People were call'd together, in the latter only a *part*.

The *Comitium*, or Place where the *Comitia* were ordinarily held, was a large Hall in the *Roman Forum*: It was a long time open at top; on which account, the Assemblies were often interrupted by the ill Weather: 'Twas first cover'd over in the time of the second *Punic* War. See Forum.

Rosinus observes, that the Consuls and Tribunes were not created in the *Comitium*, but the *Campus Martius*.

The Word comes from the Verb *Coeo*, or *Comeo*, to go together.

COMITIALIS *Morbus*, an antient Term for the Epilepsy, or Falling-Sickness; so call'd, because if any Person was seiz'd with it in the *Roman Comitia*, the Assembly was immediately dissolv'd: this being esteem'd an evil Omen. See EPILEPSY.

COMMA, in Grammar, a Virgula, Point, or Character form'd thus [,]; serving to mark a short Stop, or Pause; and to divide the Members of a Period. See POINT, &c.

'Tis very difficult to fix the precise Use of the *Comma*; different Authors define and use it differently: The ordinary Doctrine is, that the *Comma* serves to distinguish Nouns, Verbs, Adverbs, and the several Parts of a Period, that are not necessarily join'd together. But this conveys no clear, precise Idea; for what is it *to distinguish the Parts of a Period not necessarily join'd together?*

F. *Buffier* has carried the Doctrine of the *Comma* much further: The *Comma* serves to distinguish those Members of a Period, in each whereof is a Verb, and the Nominative Case of the Verb. Thus, *That so many People are pleas'd with Trifles, is owing to a Weakness of Mind, that makes 'em love things easy to be comprehended.*

Besides this, the *Comma* is used to distinguish, in the same Member of a Period, several Nouns Substantives, or Nouns Adjectives, or Verbs not united by a Conjunction. Thus, *Virtue, Wit, Knowledge, are the chief Advantages of a Man*: Or, *a Man never becomes learned without studying constantly, methodically, with a Gust, Application*, &c.

If those Words be united in the same Phrase by a Conjunction, the *Comma* is omitted: Thus, *The Imagination and the Judgment don't always agree.* The *Comma* may also be omitted between two Phrases that are very short, especially if they depend on the same Regimen, and are united by a Conjunction: Thus, Alexander *conquer'd* Asia *and establish'd the Monarchy of the* Greeks.

The Author of the Treatise *de Ratione Interpungendi*, printed with *Vossius*'s *Element. Rhetor.* Lond. 1724. lays down the Use of a *Comma* to be, to *distinguish the simple Members of a Period, or Speech*; *i. e.* such as only consist of one Subject, and one definite Verb. See SENTENCE.

Thus *Cicero, Venio nunc ad voluptates agricolarum, quibus ego incredibiliter delector, quæ nec ulla impediuntur senectute, & mihi ad sapientis vitam proxime accedere videntur.*

But this Rule does not go throughout; the same Author instancing many particular Cases, not included herein, where yet the *Comma* is advisable. See POINTING.

Sometimes, *e. gr.* a Proposition includes another, which may be called *Partitive*, as being only a Part of the entire Phrase; in which case, the two are to be divided from each other by *Commas*. Thus, *He always says, as he tells us, the finest Things in the World.*

The Points, or Pauses in Discourse, 'tis observ'd, are in a kind of musical Proportion: The *Comma* stops the Reader's Voice while he may privately tell one; the Semicolon, two; the Colon, three; and the Period or Full-stop, four.

The Antients only made two Kinds of Points, or Pauses in a Period; the larger they called *Members*, the Greeks *Cola*, thus [:] the smaller *Incisa*, the Greeks *Commata*, thus [,].

The Moderns, refining on the Antients, have subdivided the first into a Colon and Semicolon; some say, without any good Foundation in Nature; tho others stand up for the usefulness of the Division. See COLON.

As the Member, or Colon divides the Period into two Parts, each containing a Sense, tho that imperfect; thus, *Antequam de Republica, patres conscripti, dicam ea quæ dicenda hoc tempore arbitror*; where the Sense does not rest, nor is the Period or Sentence perfect, without the Addition of, *exponam vobis breviter & profectionis & reversionis meæ*: The *Comma* subdivides each Member into intermediate Divisions, which, of themselves, have no precise meaning at all; *v. g. Nihil est, mihi crede, virtute formosius, nihil pulchrius, nihil amabilius.*

Frequent *Commas*, as on other occasions they promote perspicuity and distinctness, and ease the Reader, both in the Rehearsal and Comprehension of his Author; so, in Oratory, are they of especial use and effect; particularly where an Adversary is to be closely and pointedly attack'd, upbraided, reprehended, wounded, &c. witness that of *Cicero* against *Verres*; *Non enim nos color iste servilis, non pilosæ genæ, non dentes putridi deceperunt: oculi, supercilia, frons, vultus denique totus, qui sermo quidam tacitus mentis est, hic in fraudem, homines impulit: hic, eos, quibus eras ignotus, decepit, fefellit, in fraudem induxit: pauci tua ista lutulenta vitia novimus; pauci tarditatem ingenii, stuporem, debilitatemque linguæ*, &c. See PERIOD.

COMMA, in Musick, is the smallest of all the sensible Intervals of Tune. See INTERVAL.

The *Comma* is about the tenth Part of a Tone: or, it is the Interval whereby a perfect Semitone surpasses an imperfect one; or a perfect Tone, an imperfect one. See TONE.

M. *Sauveur* says, a *Comma* is the Difference between a Tone-major and minor. It is seldom in use, except in the Theory of Musick, to shew the Justness of the Consonances; for in the Practice, the Division is drown'd and lost. Each lesser Tone ordinarily contains ten *Commas*.

Lancelot only divides his Tone into nine Parts, or *Commas*; so that according to him, a *Comma* is the ninth Part of a Tone.

The proportion of the greater *Comma* in Numbers, is as 80 to 81; that of the smaller, as 2025 to 2048. See TUNE.

The Word *Comma* is *Greek* form'd of κόπτω, *seco*, I cut.

COMMANDING *Ground*, in Fortification, is such as overlooks any Post, or strong Place.

Of this they reckon three sorts; first, *A Front Commanding Ground*; which is an Height opposite to the Face of the Post, which plays upon its Front. See FRONT.

2d, *A Reverse Commanding Ground*, which is an Eminence that can play upon the Back of any Place or Post.

3d, *An Enfilade Commanding Ground*, or *Curtin Commanding Ground*; which is an high Place, that can with its Shot scour all the length of a strait Line. See ENFILADE.

COMMANDMENT, in a Legal Sense, has various Uses: as, *Commandment of the King*, when, on his own mere Motion, and from his own Mouth he casts a Man into Prison.

Commandment of the Justices, is either *absolute*, or *ordinary*: *Absolute*, as when on their own Authority, and their own Discretion, they commit a Man to Prison for Punishment.

Ordinary, as when they commit him rather for safe Custody than Punishment. A Man committed on an ordinary *Commandment* is replevisable.

Commandment is also used for the Offence of him who directs or wills another to transgress the Law; as by Murder, Theft, and the like.

COMMANDRY, a kind of Benefice, or certain Revenue belonging to a Military Order, and conferr'd on antient Knights who had done Services to the Order. See KNIGHT.

There are *strict*, or *regular Commandries*, obtain'd in Order, and by Merit: there are others of *grace* or *favour*; conferr'd at the pleasure of the Grand Master.

There are also *Commandries* for the Religious in the Orders of S. *Bernard* and S. *Anthony*. The Kings of *France* have converted several of the Hospitals for Lepers into *Commandries* of the Order of S. *Lazarus*. See LEPERS.

Commandries may be compar'd to Conventual Priories; which, at first, were no more than Administrations of the Revenue of certain Places at a distance from the principal Monastery: As there was a necessity for having Monks dispos'd in these Houses to take care of the Effects: so there was the like necessity for sending Knights into those Places where the Order had Lands.

The Commandries of Malta are of different Kinds; for as the Order consists of Knights, Chaplains, and Brothers Servitors, there are peculiar *Commandries* or Revenues attach'd to each. See MALTA.

The Knight to whom one of these Benefices or *Commandries* is given, is call'd *Commander*: which agrees pretty nearly with the *Præpositus* set over the Monks in Places at a distance from the Monastery, whose Administration was call'd *Obedientia*; because depending entirely on the Abbot who gave him his Commission. Thus it is with the simple *Commanders* of *Malta*, who are rather Farmers of the Order than Beneficiaries; paying a certain Tribute or Rent, called *Responsio*, to the common Treasure of the Order.

COMMEMORATION, the Remembrance of any one; or something done in honour of his Memory.

Among the *Romanists*, 'tis a Practice for dying Persons to leave a Legacy to the Church for the rehearsing so many Masses in *Commemoration* of them. See OBIT, &c.

The Eucharist is a *Commemoration* of the Sufferings of Jesus Christ; and is not, therefore, Jesus Christ himself. See EUCHARIST.

COMMEMORATION is also the Name of a Religious Feast in the *Romish* Church, held on the second of *November*, in memory of all the Faithful deceased; instituted in the XIth Century, by *Odillon* Abbot of *Clugny*. See FEAST.

The occasion of its Institution is variously related; the most plausible account is this: A Religious Knight returning from a Pilgrimage to the Holy Land, and losing his Road, met a Hermit; who hearing that he was a *Franc*, ask'd him if he knew the Monastery of *Clugny*, and the Abbot *Odillon*; the Pilgrim professing his Knowledge of both, the Hermit told him, that God had discover'd to him, that he was to have the Credit of delivering the Souls from the Pains they suffer in the other Life; charging him, at his return, to exhort *Odillon*, and those of his Community, to continue their Prayers and Alms for the Dead. See CLUNY.

COMMENDAM, in the Canon Law, the Charge, Trust, and Administration of the Revenues of a Benefice, given to a Layman to enjoy, by way of *Depositum*, for the Space of six Months; in order to its being repair'd, &c. or to another Bishop, or Ecclesiastic to perform the Pastoral Offices thereof; till such time as the Benefice is provided of a regular Incumbent. See BENEFICE.