Again, as the New Moons are the same, that is, fall on the same date every 19 years, so the difference between the Lunar and Solar Year is the same every 19 years. This is the reason why the New Moon, in order to adjust it equal to the Solar Year, it is divided by the difference, which is called the "Ephes" of the said Year, that is, the number to be added to the Solar Year to make it equal to the Solar Year; the word being formed from the Greek, σαλπη, meaning "to divide.

Upon this mutual Respect, between the Cycle of the Moon and the Cycle of the Ephes, it is founded this Rule for finding the Ephes belonging to any Year of the Moon's Cycle: Multiply the Year given mentioned in the Moon's Cycle into 114; if the Product be less than 50, it is the Ephes; if the Product be greater than 50, divide it by 50, and the remainder of the Dividend is the Ephes. For Instance, I would know the Ephes for the Year 1712, which is the third Year of the Moon's Cycle. Wherefore 3 is the Ephes for 1712. For 114 x 3 = 342, and 33 being divided by 50, there is left 3, which is the Dividend for the Ephes. See Cycle.

By Help of the Ephes may be found what Day of any Month in any Year the New Moon falls on, that is, the Number of the Moon from March inclusively, added to the Ephes of the Year given; if the Sum be less than 50, subtract it out of 50; if greater, subtract it out of 60, because 60 is the Remainder will be the Day, whereas the New Moon will fall.

If the New Moon be sought for in the Month of February, the Day of the Month is to be added to the Ephes if for February or April, then only 1 is to be added.

For Example: I would know what Day of December the New Moon was on A.D. 1711, the Ephes whereof is 33. By the Interpolated Rule, I find the New Moon will be on the 25th; for 22 + 33 = 55, and 55 - 32 = 23. See Moon.

The Day when the New Moon falls, being thus found, it is easy to infer from thence what the Age of the Moon is on any Day Given.

However, there is a peculiar Rule commonly made use of to this Purpose, which is this: Add the Ephes of the Year to the Number of the Month, from March inclusively, and the given Day of the Moon all into one Sum, which if it be less than 50, flows the Age of the Moon; if it be greater than 50, divide it by 50, and the Remainder of the Dividend flows the Age of the Moon, or how many Days it is from the last New Moon. This Method will never err a whole Day.
Art, to form the Manners by Inheritance, diffused under the same tribe, in a probable, entertaining, and surprising Manner. See Poems.

The Epigje is distinguished from the Comic, in that the Action of the latter is not important, nor is it related by the Poet, but acted by the Persons introduced for that Purport; which Circumstance, likewise, distinguishes it from the Epic, or Historical Poem.

Nor is it a philosophical Poem, as that of Eratosthenes, on the Creation of Sir R. Blackmore; nor a Tragedy of Agrippa, as the History of the Christian Church. It is a Poem on which the united labours of Doctor Johnson, Dr. Burnet, and Dr. Prideaux, have been lavished, and from which we learn that in the Epic Poem, according to Aristotle's Sentiment, the Persons and Actions, however named, are all Joys, all Pleasures, alljustify, all Manner, to posterity.

But the Poets thus taking on 'em the Office of Moral Philosophers, did not come to be Divines. On the contrary, their Moralians, being often quoted in a Sentiment, that the Poem should introduce the Deity into their Works; as the Knowledge, Fear, and Love of God, are the first and most solid Foundations of all Morality. The Prehence of the Divine Being and Law, is so evident in the Poem, that it is impossible to have of the Action, obliged the Poet to make the Action great and important, and to have it transmuted into, or connected by Epiphany. The same likewise obliged the Poet to think and speak, in a manner elevated above the common Pitch of Men; and equal, in some respects, to the Dignity of the divine Person introduced. To which, and serves the poetical and figurative Language, with the Majesty of Heroic Verse. Add, that as much of the divine and miraculous might ruin the Probableness, they were hereby obliged to have Reserve to several Rules to maintain the Faith.

Thus much the Poets were driven to by the Substance of the Things they had chose for the Matter of their Poems. The Term Epic, has therefore continued, and is as useful and methodically applied, 'em to several other Rules. See Unity, Episode, &c.

In Epic, the Terms are more for the Manners and Habitudes, than for the Person. These latter rule all at once, and their Violence is but of short Duration; but the Habitudes are more calm, and imperious, and of longer Duration. Consequently, the Epic Action could not be included in the Space of a Day, as that of the Theatrical. A longer Time was necessary than is required by Tragedy, which is a Term for a Day together.

This Definition has introduced a World of Difference between Tragedy and Epic Poetry. The Tragic Violence requires a more lively and animated Representation, than a mere, or a greater Duration; it is a Time of Action, and the Poet never speaks at all, as he does in the Epigen, where there are no Actors.

See Further of the Nature of the Epic Poem under Fable.

For its Matter, see Action. For its Form, see Navigation. See also Manners, Character, Machiavelli, &c.

EPICARPIUM, in Medicine, a Kind of Remedy, usually in Form of a Carapace, or Phyllis, consisting of sharp, penetrative Ingredients, as Gallic, or Onion, and applied to all kinds of Indurations and Swellings, round the Wrists, at the Beginning of the Access of a Fever, to prevent the fame.

The Word is formed of the Greek ἐπικαρπίω, to eat, and proper Names, Epicarpius, Epicarpus.

EPIDEMION, in the Greek and Latin Poetry, a Poem, or poetical Composition, on the Death of a Person.

A well written on the Death of any Person is of the Kinds of Discourses usually made: That rehearsed on his Phæbus, or Funeral Eulogy, was call'd Neusis; that engraved on his Tomb, Epitaph; and that spake in the Cerimony of his Funeral, Epitaphia. See NEUSIS and EPISTAPHE.

We have two beautiful Epiptaphs in Fugio, that of Eutyphan, and that of Pallas.

The Word is Greek, formed of εὖ, well, and φάτειος, to do the last Office to any one, of ἐπι, upon, care.

EPICOENE, in Grammar, a Term applied to Nouns, which, by the same Gender and Inflection, mark, indifferently, this or that Kind, or Sexes. See Gender.

Such, in Latin, is Aquila, Vesperitio, &c. which signify equally, a Male or Female Eagle, or Bird.

Gender is distinguished between Epimulation and Conson: A Noun is said to be common to two Kinds, when it may be joined either with a Mafculate, or a Feminine Article; and Epimenes, when it is always to be applied to both Genders.

EPERASTICAS, in Medicines, are Remedies, which, by their Substantive Virtue, not only act upon the Affects of the Animal, but remove the Affects of the Animal, but remove the Affects of the Animal, and also expel the Painful Stimulation of the Patient induced or excited: Such are the Roots of Aethis, Mallows, Loquaces; Leaves of Lettuce, Mallows, and Iron, Purifies; the Flowers of Poppy, &c.

The Word is formed of ἐπι and ἐπιστάμενος, temporary, I moderate, correct.
EPICUREANISM, in logic, an Argumentation, consisting of four, or more Propositions; some whereof are Proofs of other. And so it is evident, that Cato's saying, Castra ad Mili, may be reduced to the Epicureans. Thoreas that Waylay a Man to kill him, his lawful for him to kill him, as is allowed by the Laws of Nature and Nations, and by the Practice of the best and wisest Nations. For as he appears from his forming an Ambuscade before his Country Houses, and from his Providence of Weapons,Soldiers, &c. Therefore it was lawful for Mili to kill Cato.

EPICURIC. Region, from Æsop, fignes, upon, and Colon, the Gue; so called a Name given by Dr. Giffon, to that Space, on both Sides, over the Colon. See Colon.

EPICURUS, a Philosopher, and a Poet, who adheres to the Doctrines and Opinions of Epicurus. See Epicureanism.

The Epicureans have, in all Ages, been deemed for their Mirth, their Peace, their Joy, their Coquetry, their Sports. Several Authors, particularly Cicero among the Ancients, and Gessius among the Moderns, have endeavoured to ACCOUNT FROM THIS CHARGE; by showing that the Pleasure wherein their Matter Epicurus placed the phaimas human, or Superbe Happiness, of this Life, was not any sensual, or brutal Pleasure, but a Contemplative, and Tranquility of Mind, except from all voluntary Passions. If this Opinion is true, no Man is to be suffered to enter into the Question, which Gessius, Du Rastant, and others have exhorted, that certain, that in the Chriftian Religion, the Epicureans constantly signifies a Debauche, an Insolence, a Spaniard, which he only confounds his Pleasure, without concerning himself with any Thing serious.

In Epicurus there were always two Kinds of Epicureans; the Rigid, and Remis: The Rigid Epicureans, were those strictly attached to the Sentiments of Epicurus, who placed all their Happiness in the pure Pleasures of the Body, in the Practice of Virtue. The Rigid Epicureans, taking the Words of that Philosopher in a strict Sense, placed all their Happiness in Pleasures of the Body, in Eating, Drinking, Loving, &c. The former Kind, which was the more numerous, was called Epicureans, the other the Sophists of their Set.

The Epicureans take their Name from the Chief of their Set, Epicurus, whom none, however, deny to be the Author of the System, and the Father of the Practice of Virtue. The Remis Epicureans, with Rutiling for Physicks, the Doctrine of Descurtius; and for Ethics, that of Arisippus. But this, he was an Athenian, and the Son of Nocis; born in the 190th Olympiad, and consequently 234 Years before Christ. He began to form his School at Mystræ and Leontica, about the 34t Year of his Life. He was, in his Philosophical Tunic, called the philoOaphic Chief in his Garden: And died of the Stone at 72 Years of Age.

EPICUREANISM, or EPICURUS, Philosophy, the Doctrine of Epicurus, as maintained by Epicurus, and his Followers. See Epicureans.

The noble Poet Laertius, who has given us a beautiful System of Epicureanism in the Latin Verse, prefers its Principles over all others. He says, "Epicurus, he makes no Scruple to say, he obeyed, as much as the Sun does the other Stars. Tis said he first taught Grammar; till upon reading Democritus's Books, he began to apply himself to Philosophy. From Descurtius he learnt the Doctrine of Atoms, or Corpuscles, which he afterwards made the Base of his Phy- sical System. From the Ancients, he took, and advanced, that Epicurus took his chief Doctrines from Descurtius, and consequently, he greatly improved and elucidated them. Did. Laertius affirms, he composed an infinite Number of Volumes. He divided his Philosophy into three Parts: I. Concerning things, Physical and Moral, and Sheds, Called 3; which he explained briefly in three Epistles. The first, as Laertius relating, was about the Cosmos, or Rules of Judging, and establishing the Use of Logic, which he established the Senes, Palla, and the Thesauri, as the Criterions, or Judges of Truth. See CRITRIUM, SENES, &c. In the Second, he laid down Atoms, Space and Gravity, as the Fundamentals of all Things. He Universal he taught, consisted of Atoms, or Corpuscles, of various Kind, Magnitudes and Weights, which having been dispersed by Random the universal Immensity, or Space, fortuitously continued to meet, according to the unchangeable Laws, which were thus formed, and afterwards, from Time to Time, increased, changed, and dissolved again, without any certain Cause, or Design; without the Intervention of any Deity, or the Inclination of any Providence. See Atoms and COSMOPOLIS.

Not that he denied the Existence of a God: On the contrary, he affirder it; but thought it beneath the Majesty of the Deity to concern itself with Human Affairs: Laertius affirms, he held him, πανέξυπνος, ον καὶ παραστασις της ἔναντι τας, A Blind, Immortal Being, having no Affairs of his own to concern himself with, as the Laws of Nature do not inform us, so do not the Appearances of the Heavens. See COPPEBRUGAE. SPACE, GRAVITY, Electron, &c.

As to Epicurus, his first Principle, or the supreme Felicity of Man, he held, was Pleasure. Which, as already observed, is founded on the Happiness, or Enjoyment of Mental, and others of Carnal Pleasure. See Epicureans.

EPICURUS, in the ancient Astronomy. As the Astrono- mers have often erected an Eccentric Circle, to solve the apparent Irregularity of the Moons, Planets, and the Distances from the Earth; they have likewise invented a little Circle to solve the Stations, and Recreations of the Moons; by which they call Epicurus, has its Centre in the Circumference of the Earth, and which, is the Eccentric of a Planet. See ECCENTRIC.

In this Eccentric, the Centre of the Epicure Circle moves; consequently the Circumference is movable, and changes the Circumference of the Earth; which moves downwards, according to the Order of the Signs, and when upwards, contrary to it. The highest Point of the Earth is called the Apeiron, and the lowest the Perigee. See APERTUS, and PERIGEE.

The great Circle, in whose Circumference the Centres of the Earth is placed, is called the Delfin of the Epicure Circle, because of the resemblance that the Earth moves in a circle.

Thus, the Moon is supposed to move in a small Circle, whose Centre is in the Orbit of the Earth, according to the hypothesis of Copernicus: But in that of Ptolemy, where the Earth is a Stationary Sphere, which revolves with the Moon, of the Thithicus, lowered its Heaven or Orbit; and which, sometimes showed it higher, and sometimes lower. See PROTRACTED SYSTEM.

A Point of the Epicure Circle is a Point of the Earth's Motion:

In order to under the Phenomena of the Motions of the Planets more, the Motion of the Sun, the other of the Orbit of the Earth, as an Epicure, to the Orbit of the Planet, that the Earth should proceed in an Epicure, while it is carried through.

The Orbit round the Sun: But this is far from answering their Expectations. Wesf, Eth. Math. T. H. p. 311. From what it is the Orbit of the Earth, or the Earth's Motion: The Earth, could not make any Atlantical Tables that should tolerably agree with Observation, without supposing the Earth to move; not, tho' he called all in the Earth's Motion of the Orbit, the change of the Earth, liable to continual Increase and Decrease, and variously inclined to the Equinoctes. De Chale, Atrian, Reform. Lib. X. c. 1. 553.

The Word is formed of the Greek, εκ εικος, and σεος, Circle, o'd, a Circle on a Circle. EPICICLoid, in Geometry, a Curve generated by the Revolution of the Periphery of a Circle, along the Convex, or Concave Part of another Circle. See Circle.

A Point of the Circumference of a Circle, proceeding along a Plane, in a right Line, and at the same Time revolving along a Circle, called Epicicloid. See cECICLOID. And the generating Circle, if in the right Line, it move along the Circumference of another Circle, whether equal or unequal; the Curve described by any Point in its Circumference is called an Epicicloid.

If the generating Circle proceed along the Circumference of the Periphery, it is called an Epiyeloid, or Interior Epicicloid. If the Periphery, a lower, or Interior Epicicloid. In an Epicicloid, the generating Circle moves along, called the Base of the Epicicloid. Thus in Taf. Geom. Fig. 18. D B is the Base of the Epicicloid. V E the Vertex; V B its Axis; D P V half of the Exterior Epicicloid, formed by the Circumscribed Semi-circle V L B, which is called the Generator, along the Convex Side of the Base, D B; As D P U is the Extremity of the Exterior Epicicloid, formed by the Generator's revolving along the Concave Side of the Base.

The Length of any Part of the Curve, which any given Point in the revolving Circle has describ'd, from the Time it touched the Circles, or two Circles, is double, as the square of the Dege of the Circle, as the Sum of the Diameters of the Circles, to the Semi-diameter of the quadrant of the Circle: For this Circle moves upon the Convex Side of the quadrant of the Circles, in the Revolution of the Circle, as the Difference of the Diameters, to the Semi-diameter.

Dr. Halley gives us a general Proposition for measuring all the lengths of the curve, in a similar Curve, to any other Curve. See Curve.

The Area of a Circle, or Epicicloid, either primary, or secondary, is to the Area of the generating Circle, and also the Area of the Parts, generated in the Curve, to the Areas of analogous Segments of the Curve. As the Square of double the Velocity of the Centre and Velocity of the circle
circular Motion, to the Velocity of the circular Motion. The Demonstration hereof. See in Phl. Tract. No. 108.

EPIDEMIA, or EPIDEMIC. Díafýs, is sometimes used for the Nasty, Díafýs, sometimes for the Infallible, and sometimes for one to another. Such as the Plague, Pox, Scorbutus, &c. Epidemíva Díafýs, however, is more properly, and usually, understood of a general or Spreading Disease, as a Plague, an epidemic Scrofula, or Move Disease Air, which feaçd great Number of People in a little Time.

The Word is form’d of the and . Populærius, People; each Diffactus runs by Finesse, on all kinds of People, of whatever Sexes, Quality, &c. as arising from a common or general Cause. Wherein the Latin call them Populærius Morbi, popular Diffactus; in Opposition to those cal’d Epidemíva, which occur only there and there, as arising from private, or particular Causes. See SPORADIC.

EPIDEMIA, in Antiquity, Fruits of Apollo at Delfbos, and Minerva; and of Dionysus as Argo. The Cause of the Plague, or other Epidemics, by Reafon those Gods were imagin’d to be present on those Days among the People. Accordingly, on the last Day of the Epidemia, they finge Hymns, call’d Anthemoria, to bid them adieu, and for their future on their Journey. As tho’ those Gods could not be every where, and yet were honou’d in Abundance of different Places, there were Temples, and Anthemoria, &c. One Place to another to receive the Vows of their Adorers. See SADLER, POST.

L. III. C. 114.

EPIDERMIS, in Anatomy, the Cuticle; or Scurf-Skin. See CUTICLE.

Some hold the Epidermis to be form’d of the Excrescences of the Dermis, or Skin; Hypopaters is of Origin, to grow out of, or to grow by, as a Scar, or a Wound, or the like, when cold, we call a Pellicle form’d.

But ’tis now past doubt, that it is produced at the same Time, and after the same Manner with the other Parts; it being found in Parasita of all Kinds, in the Womb; it has neither Veins, Arteries, nor Nerves; whence it is indefinable.

The Word is form’d of the Greek, , 1, and .

EPIDIDYMIS, in Anatomy, a little, round Body, on the Back of each Testicle; call’d also Parastata. See PARASTATA.

A Place is form’d of the Greek, and .

EPIGASTRIC Region, is a Name given to the upper Part of the Abdomen, or Belly; reading from the Carthiago Xyphos, almost to the Stomach. See STOMAC.

It is divided into three Parts; The Sides, or lateral Parts, cal’d Hypochondrius and the middle, the Epigastrick. See PARASTATA.

There are also two Epigastick Veins, and as many Arteries. The Arteries are Branches of the Iiac External Arteries; The Veins discharge themselves into the Iiac External Veins. See PARASTATA.

EPIGASTRIUM, in Anatomy, the middle Part of the Epigastrick Region; or, according to others, the interior Part, or the Alimentary Part of the Body. See PARASTATA.

The Word is form’d of the Greek, and .

EPIGLOTTIS, in Anatomy, the Cover or Lid of the Larynx. See LARYNX.

The Epiglottis is a thin, movable Carotille, in Form of a Leaf of Ivy, or a little Tongue, and therefore likewise call’d Langula; serving to cover the Cleft, or Rima of the Larynx, call’d Glottis. See GLOTTIS.

The Word is form’d of and .

EPITAPHE. Takes the Epitaph to be the principal Organ, or Infrument, of Voice; serving to vary, modulate, and render the Voice. See VOICE.

Its Bafe, which is pretty broad, is in the upper Part of the Carthiago Xyphos, and its Point, or Tip, turn’d towards the Palate. It is form’d by the Weight of the Palate, and is so; but not so exactly, but that a Cawn, or a Drop, sometimes escapes thro’ it into the Trachea.

See TRACHEA, &c.

The Greek, , in Poetry, a short Poem, or Composition in Verbe, treating of one only Thing, and ending with some Point, or lively, ingenious Thought. See POEM.

The Word is form’d of the Greek, .

Galen takes the Epitaph to be the principal Organ, or Instrument, of Voice; serving to vary, modulate, and render the Voice. See VOICE.

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EPI

Verfa; it must have its Unity like the Drama. The Comedy has an Action for its Subject: and the Epigram a Thought. See Unity.

EPIGRAPH, an Inscription on a Building, to signify its Use, Occasion, the Time when, and the Person by whom it was written.

The Word is Greek, and signifies Superficially.

EPILEPSY, in Medicine, a Convulsion, either of the whole Body, or some of the Parts, attended with Depressions of the Mind and Understanding; and returning from Time to Time in Fits, or Paroxysms. See Convulsion.

The Patier feareth hereof, falls insensibly and suddenly down; or, rather, through his limb violently to the Ground. When down, he grinds his Teeth, foams at Mouth, and frequently shakes his Head; his Arms, Legs, Neck, Back, &c. either becoming rigid, or suddenly falling; all these Fits are, in real Contra- tion, there is frequently an involuntary Flux of Urine, Seed, and Seem Matter. After some Time he returns to himself, only retaining a Head Ache, Heaviness, Weakness, &c.

Emissary more accurately distinguishes the Difae into three Degrees: The first, or low, is much the same with the highest Degree of a Vestige. See Vesta.

In the second Degree, there are various Agitations and Gelulations; and the Senes, both external and internal, either remaining, or being transported into a Delirium; they dance, flog, laugh, weep, growl, and often for their Bread and Water, and sometimes nothing at all.

In the third Degree, which alone is ordinarily called the Epilepsy, the Patient is in a sort of Somnolence and Senile; fall, or ring themselves down, form, grind their Teeth, and bite their Lips, with the other Circumstances above related. Those affected with the second Degree, are usually below the Age of Forty.

The Cause of this Difae, Boreas attributes to too much Action of the Brain, on the morose Nerves, and none on the sensitive ones. Some are pleased to account for it, from an excess of the animal Spirits, mingled with the animal Spirits, and giving them extraordinary and irregular Motions, and Directions; whence arises its Dilution from a Syncope, and Apoplexy, which take away the Sensation as well as Sense. See Syncope and Apoplexy.

The Epilepsy is either Idiopathic, or Syphilitic: It is Idiopathic, when it arises merely from a Disorder of the Brain; it is Syphilitic, when it is preceded by some other Disease which brings it on.

The Epilepsy sometimes hangs many Years to a Person, without much Danger. But when its Paroxysms return fast, it renders the Patient more or less paralytic, delirious, or stupid. In young People there is Hope of its going off about the Time of Puberty. Epileptics observes, that when it isPesened before the Age of Forty, it lasts for Life; but this does not always hold.

The Cure is very difficult: The principal Anti-epileptic are: The Roots of Penny, Leaves of the Valeriana, Bark of the Oak, or Hazle, Box-wood, Spirit of black Cherries, Spirit of human Blood, human Secondaries, human Granatum, Tooth of the Sea-Horse, Caffeinum, Peacock Dung, Camphor, Sulphur, and Oil of Aniseed.

to recover a Person in a Fit, Tobacco Smoak, or that of burnt Feathers, is recommended. Barbees above all Things directs the Flowery Spirits of St. Anniance into this Difae: Cato, native Cimbrian. Sir John Calsuch has an exacts Trefite on the Millet of the Oak, to shew if it a Specific in this Difae. Elks Claret, made in the Name of him, is the Remedy, its Precipitation, &c. under its proper Term in this Work, as Mixtet, Ella Cloes, &c.

E. P.

M. Putmot, from a Discussion of an Epileptic Person, whose Name was John Smith, and who was found a deal of white, thick, vivid jittina, glued, and, as it were, incorporated with the Membrane, thinks, that this might be the Cause of the Difae: The excessive Quantitv of such thick Lypdiga, loading the Brain, and ob- struting its Motions. The first Cae, he judges, might be the Spongopoiia of the Dana Mater, which imbibed the Scrubies of the Brain. He observes, that he knows an Epileptic Person, who, upon the first Approach of his Disorder, rubs his Forehead with his Hand, and bends his Head as far backward as he can, retching against all the Lymph, and finding himself against the Convulsion. 'Tis probable, that by this he gives a Motion to the Lymphs, and drives it from the Place where it before did dwell.

The Word Epilepsy is form'd of the Greek ἔπιληψις, ἔπιληπτικός, to surprize, graft hold of, by one, reason the Difae forces and overcomes the Senes, so that the Patient seems as if dead.

In Epifh it is usuall' called the Falling Sickheus, by reason People fall down when attack'd therewith. The Latins call it Convulsus Morbus, by reason when any Body was seized therewith, they convulsed, and by reason of the Convulsion, they prefently broke up the Altenity, as deeming it an unhappie Prefixe. See Convulsion.

Some call it the Master Sheet, as supposing it sent by God, immediates thereto, as Pater, the Marus Casius, others Heracleus, Sactius, Lieo Desdeo, &c.

EPIL goodbye and, in Quoter, &c. The Persona- ring, by the Difae in Men, there is ordinarily made a Recapitulation of the Principal Matters deliver'd therein. See Peroration.

The Word is form'd of the Greek ἔπορα, of the Verb ἔπορο, I say after, the Epilogue being the End, or conclusion of a Poem.

EPILOGUE, Epilogue, in Quoter, &c. The Para- ring, by the Difae in Men, there is ordinarily made a Recapitulation of the Principal Matters deliver'd therein. See Peroration.

The Word is form'd of the Greek ἔπορα, of the Verb ἔπορο, I say after, the Epilogue being the End, or conclusion of a Poem.

EPILOGUE, in Dramatic Poetry, a Speech address'd to the Audience, when the Play is over, by one of the principal Persones, or Adversaries, and containing those Incidents in the Play, particularly those of the Part of the Person who speaks it.

In the modern Tragedy, the Epilogue has usually somewhat of Pathosfury in it; intended, we suppose, to complete the Paffions raised in the Course of the Representation, and find away the Audience in good Humour; tho' how far that Design is good and laudable, will bear some Debate on its Vertue.

An ingenious Author in the Spectator, compares it to a merry Jig on the Organ, after a good Sermon, to wipe away any Impediments that might have been made thereby, and to give the Audience a good Start home.

In Effect, tho' the Epilogue, in this Sense, may form an Albat; yet has it the Countenance of Antiquity; The Romanus had something of the same Nature, too, in theiroro. Even the Deus of Farce, brought on the Stage when the Tragedy was over; ut quidquid Locarnsum in tristia expetit ex Tragioidis effectus, non est.see Epiloga, digni rebus digniter, fauco et invenio.

The Epilogue is but of modern Date, much later than the Prologue. See Prologue.

Many, indeed, have taken the Euphorias of the ancient Greek or Epilogue, by reason Aristophanes defines it, to be a Part rehearsed after the Chorus had sung for the last Time: But, in Reality, it was of a quite different Nature. The Euphorias was, last Part of a Tragedy; containing the unravelling and Catastrophe of the Plot, and answering to our last Act, or Actus Finis. See Endum; Actus Epilogue.

EPILOGUE AND EPILOGUE, form'd of the Greek and Latin Poetry. It has two different Significations among the Ancients. 1. A Feast, Ceremony, or Rejoicing, on Occasion of a Victory obtained. 2. A Poem, or Composition, on the occasion of a Victory.

Seals, treats expressly thereof in his Poetics, I. c. 44. The Word is form'd from the Greek ἐπιλογία, Victory.

EPISPANY, in Antiquity, the Feast of Kings. A Day which preceded Lent, and was celebrated in Rome on the 11th of January, New-Year's-Day, in Honour of the Appearance of Jesus Christ to the Three Kings, or Magi, who came to adore and bring him Preces. See Feast.

The Feast of Ephesus, now held in Honour of the Adoration of the Magi, had, at its first Institution among the Greeks, a different Obje, &c. Our Saviour's Birth; and was called Theophany, and Epiphaney, that is, Appearance.

Pope Julius, who reign'd from the Year 357 to 552, was the first who taught the Church to distinguish the Feasts of the Nativity, and Epiphany, and Epiphany, &c. paral- lelly. See Nativity, 2. T. Vii. See also Ephesus.

The Word in the Original Greek, ἑορτήδας, signifies Appearance, or Appearance; and was applied, as some Critics have will, to this Feast, on Account of the Sun's first rising at the West, &c. See Chrysolam, take it for the Day of our Saviour's Baptism, when he was declared to Men by the Voice, He is the Beloved Son, in whom Ye are Complete. This is my belief, and I will carry it in my heart. But it is still obderved by the Coptic and Ethiopians in this View. See Iadolph, Hist. Eptist. Lib. XXI. c. 5.

Others connect the Feast of the Nativity, or of the Saviour, with the divers Churches on this Same Day; which had the Denomination of Appearance, or Appearance, by reason our Saviour first appeare on Earth on this Day. But this Day is also celebra- fed among the ancient Greek Fathers, not for the Appearance of the Star to the Magi, but for that of our Saviour to the World. In which Sense St. Paul uses the Word Epiphania, in his Second Epistle to Timothy, c. 2, v. 10.
Add, that the Armenians, to this day, celebrate the Feast of the Nativity, on the Day of Epiphany, according to the Eastern Orthodox Church, which some Revo-

lutionary Missionaries have imperfectly confuted, 'en for, not knowing that the Epiphany, originally, and properly, was the Day of the Water Service, according to the

Anastomosis Marcella makes mention of this Feast, lib. XXI. c. 2. and observes that it was held in January.

Upon which Parage, Vocalibus in his Notes, endeavours to show that the Byzantine meant by the Epiphany, the Feast of the Nativity.

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In Scotland, the principal Differentes are the Epiphanias. Say Epiphanias enjoy all the same Civil Privileges with those of the Established Church. They are the same in all other respects as in England. They are predominant in all Places of Trust, upon taking the Oaths to the Government. But the Epiphanias Ministers are liable to several Penal Laws: the greatest part of them being Nonjurors.

**EPISCOPUS PERNUROS.** It was an ancient Custom for some Layman, about the Feast of Epiphany, to plait his Hair, that he might seem to have the Tenure, and ranked accordingly. As there was a Sheaf of Jurisdiction, and do several ludicrous Actions: For which Reason he was call’d the **Bishop of the Sheaf.** This Custom obtain’d among us, long after several Conversions; and it is said, to be as old as our Conversion.

**EPISODE.** is commonly conceiv’d to be a separate Incident, Story, or Action, which an Historian, or Poet, infers and connects with his principal Action; to furnish our Work with Variety; to explain obscure Passages, and a great particular Incidents, whereof the Action or Narrative is composed, are call’d **Episodes.** From the Greek, **επεισόδιον,** or **επεισόδιοσ.**

**Episodes, Epitomè:** In dramatic Poetry, was the second part of the ancient Tragedy. See Tragedy.

**The Origin and Use of Episoderis,** is admirably describ’d by M. Bédier, and Ba. Boyer. Tragedy, in its Origin, was a Spectacle, performed in the Temple, by several Persons, who made a Kind of Chorus, or Concord of Musick, with Dancing, and the like; to diversify the Representation a little, and divert the Audience, they being a sort of a Chorus, to divide the Tragedies in several Parts, and to have something rehearsed in the Intervals.

At first, a single Person, or Actor, was introduced, then two or three, and at last the Actors thus rehearsed, or entertain’d the Audience withal, being something foreign, or additional to, or beside, the Song of the Chorus, and no necessary Part thereof, was call’d **Episodes.**

Achilles, in the **Iliad,** of Homer,is an excellent Example of four Parts, the **Prologue, Episodes, Exode, and Chorus.**

**The Prologue** was all that preceded the first Entrance of the Chorus. See PROLOGUE.

**The Episodes,** all that was interposed between the Singings of the Chorus. See CHORUS.

**The Exode,** all that was rehearsed after the Chorus had done singing. See EXITODE.

**In **Episodes** are the Greek, or Company that sung the Hymn. See CHORUS.

As this Recitation of the Actors was in several parts, and inferred in several Places; it might either be consider’d, as a single Episode, consisting of several Parts; or each Part might be call’d a different **Episode.**

These several Episodes in the same Tragedy, might or might not be a Part of the same Action; or, that the same, divided into a proper Number of Recitations, or Incidents.

To consider only the first Occasion, and Institution of these same Companies, we observe that it was no way necessary that they should all be taken from one and the same Subject. Three or Four Recitations of different Actions, no-wise related, or connected to one another, would ease the Actors, and amuse the People, in the Intervals of the Chorus as well as if they were all so many parts of the same Action. By degrees, was what at first only an Addition to the Tragedy, became the principal part thereof. Then, the several Pieces, or Episodes, began to be so consider’d as but single Body, which were not parts, or Members of different Nature, and independent of each other.

The Bell Poets took the Thing in this Light, and drew all their Episodes from the same Action; which Practice was so fully established in Aristotle’s Time, that he lays it down as a Rule. These Tragedies, or Scenes, were this Unity and Conjunction was not observed, he calls **Episodes.** See EPISODE.

**Episodes in Epic Poetry.** The Term **Episodes** by being applied to Sceroids, and Erechthea, from the Epics, might not change its Nature. All the Difference Aristophanes makes between the Tragic and Epic **Episodes,** is, that the latter are more ample than the former. See Epic.

**Episodes in the Drama.** The Term **Episodes** is by some understood not to include the Tragedies, from the Greek Tragedy was not changeable. The All the Difference Aristophanes makes between the Tragic and Epic **Episodes,** is, that the latter are more ample than the former. See Epic.

**Episodes in Tragedy.** The **Episodes** are not always kept within the Limits of Tragedy, vis. *Prologue, Chorus, Episodes, and Exode.* Whence it follows, that in Tragedy, every Thing is considered as of a Part; and that as such are taken, there are Tragedies, without either *Prologue, Chorus,* or *Episodes,* the Tragic **Episodes** includes the whole Tragedy; Consequently, the *Episodes* must be the whole Poem, as it is often represented, and Invocation, which stand in lieu of the *Prologue.* In this Sense, the *Episodes* and Tragedy, have each only one *Episodes,* and if the Parts, or Incidents, be ill connected together, the Part which is not declar’d to belong to the Tragic **Episodes,** is not a proper Tragic **Episodes.**

But further, as all that was sung in the Tragedy, was call’d the Chorus, in the Singular Number, yet this Singularity did no mean prevent every Part or Division of the Tragedy from being call’d a different Tragic **Chorus.** So was with the **Episodes:** Each Incident, and part of the Fable and Action, is not only a part of the **Episodes,** but an **Episodes** is fill’d.

**Episodes** in Aristotle, as in this Sense, signifies every part of the Action expected in the Plan, or first Draught of the Fable; as the Abundance and Writings of Ulysses, the Disorders in his Family, and his Prevision which returns 2 / 3 part of the Book.**

**Aristophanes** furnishes us with a third Kind of **Episodes** in shewing, that what is contain’d and expected in the first Plan of the Fable is proper, and that all the rest is **Episodes;**

*Thus, men, he means what is absolutely necessary; and by **Episodes,** what in one Sense are unnecessary, and in another sense, so that the Poet is at Liberty to use, or let,’ though probably, and not necessarily; for Ulysses’ Absence being necessary, it follows, that he could not and might be somewhere else. If therefore the Poet was at Liberty, not to have used such particular Adventures above mention’d; yet he was not at Liberty not to have used such number as he had omitted those, must necessarily have subsidiz’d others in their Room.

*Otherwise, he would have omitted a part of the Matter contain’d in his Plan, and his Poem had been defective.**

This third Sense, therefore, of the Word **Episodes,** comes to pass, when it is certain the Plan to which that what we call **Episodes,** in the second Sense, is the Ground or Plan of the **Episodes** in the third; and that the third adds to the second, certain Characters, or Actions, which the Poet was at Liberty, not to have used; and that he had omitted those, must necessarily have subsidiz’d others in their Room.**

*Otherwise, he would have omitted a part of the Matter contain’d in his Plan, and his Poem had been defective.**

Thus the great Poets, therefore, in the Word **Episodes,** is the Word **Episodes,** or the Unity, or the Action, to be extended and amplify’d, otherwise, an essential part of the Action and Fable, does not become an **Episodes.** Lastly, ‘his in this Sense that we cannot speak of a particular Scene or other made up the **Episodes;** till after the Names of the Persons have been cho’n. Homer would not have spoke of the Fleet and Ships as he has done; if, in lieu of the Names of the Characters, he had call’d another, the *Muses* of Atragus, Cephas, and Thesid. See FABLE.

Upon the whole, the Term **Episodes,** in the Epic Poem, as used by the Father of the Criticks, Aristophanes, does not signify any separate Action; but a universalNarration of the Poet, or a necessary and essential part of the Action and Subject, amplified with probable Circumstances.

Thus, the **Episodes,** that the **Episodes** be not added to the **Episodes,** or fetched from elsewhere, but be a part of the Action; and never use the Word adding, in speaking of **Episodes,** tho’ it occur’d so naturally to his Interpreters that they have usually use’d the Word **Episodes** in Tragedy. He does not say, that after laying the Plan, and chanting the Names, the Poet is to add the **Episodes,** but uses a Derivative of the Word **Episodes,** and as if in English we should say, **Episodes,** in the Heroic Poem, &c., as if in English we should say, **Episodes,** in the Heroic Poem.

Add, that to show the different Extention of the Tragedy and **Episodes,** that is, how the one becomes longer than the other: he does not say, that there is but little difference between the Tragedy and the **Episodes,** that the **Episodes** of Tragedy are short and concise; whereas the **Episodes** are lengthen’d out and extended by em. In one Word, the taking Vengeance of the Greek, according to the usual

**Episodes** by Aristophanes, in his Plan of the Odyssey, is a simple proper Action, necessary to the Subject. It is no **Episodes,** but the As, and as it were, ﬁnale of an **Episodes,** and the next Description, with all the Circumstances of Time, Place, and Person, is no Simple and
proper Action, but an Action Epistolographic, or a real Epistle, which, tho' at the Discretion of the Post, is your Liberty and Opportunity to Subjoin your own.

From what has been said, we may venture to define Epistles to be Necessary Parts of the Action, extended and filled up with probable Circumstances. Now, an Epistle is properly Necessary in all Actions; and this Part of the Action, which is the Body, or Ground of the Action, must not, when Epistolistic, retain any Thing or the Simplicity which it had when first express'd in the principal Plan of the Fable. An Answer, An Apology, rehersing the Parts of the Plan of the Odyssy, says expressly, that they are proper; and by that, different from those that accompany. Thus, in the case of Socrates, the casting of the Plague at Thesos is no Epistle. 'Tis only the Ground, and Matter of an Epistle, which the Poet might have used, had he pleased. And An Epistle consists of that Matter, that is taken, and but few Things for his Subject; but that he had used Abundance of his Epistles, intimates, that the Subject comprehends the Ablution of the Post, may use, or let alone, at Pleasure. That is, it contains the Grounds, or Stains thereof, which may either be left in their general and simple Brevity, as Seneca has done the casting of the Plague; or may be extended and unfolded, as the same Author has done the Punishment of Odyssy.

A Subject of a Poem is lengthen'd in two ways: Either, by the Poet making use of a great many of his Epistles; or by amplifying, and giving a great Extent to every one. By this latter Method, chiefly, it is, that the Epic Poets lengthen their Poems, and so make Subjects, which must be added, that there are certain Parts of an Action, which, of themselves, don't naturally present or afford more than one Epistle; such as the Death of Hector, of Theban Women, to name but a few. There are also Parts of the Fable more copious and fertile, and which oblige the Poet to make divers Epistles on each; tho' laid down in the first Plan, with as much Simplicity as the rest. Such are the Battles of the Trojans and Greeks, the Absence of Odysseus; the Wanderings of Aeneas, &c. For Ulysses's Absence so many Years from his own Country, required his absent Epistles; and therefore the Fable was to throw him into several Dangers, and different Countries. Now each Peril, and each new Country, furnish'd an Epistle, which the Poet might use if he pleased.

The Refusal of the whole Poem is, that the Subject is not Actions, but Parts of Actions; that they are not added to the Action and Matter of the Poem, but that they make that Action and Matter themselves, as the Members make the Body: That, of Course, they are not to be fetch'd from elsewhere, but raise'd from the Ground, or Fund of the Action: That they are not united, and connected with what is before, but with what is after. That all the Parts of an Action are not so many Epistles, but only such as are amplifled, and extended with particular Circumstances. And, lastly, that the Matter that connects each other, is necessary in the Ground of the Epistle, and probable in the Circumstances thereof. See Action.

EPISODIC, in Poetry. A Fable is said to be Episodic, when the same Words and Phrases are returned to, and its Epistles are not necessarily, nor properly connected with each other. See Epistle.


The first French Poets did the like: To fill each Act, they took to many different Actions of a Hero; which had no other Connection between them, but that they were done by the same Perfon. Boffi p. 105.

If an Epistle be used, the Names and Circumstances which are necessary to it, are necessary, and Subject is no Part of the Action, that is of the Matter of the Poem; such in Epistle renders the Fable Epistolographic. This Irregularity is discovered, when we take away a whole Epistle, or all, by substituting anything in its Room; and yet leave no Chasm, or Defect in the Poem. The History of Hyppolytus, in Statius's Thebaid, affords an Instance of this Nature. If the whole Story of that Illustrious Nurti were retrench'd, the Sequel of the principal Action would be the better for it. Nor would any Body imagine he had forgot any Thing, or that there was any Member of his Action wanting. Boffi.

As an Epic Poem, in Moderns, a Romance, which being externally applied, draws or attracts the Humour of the Parts; call'd also an Attractive. See Attractive.

Of Epistles there are some which act very gently, and others with a deal of Violence. Those of the latter kind swell, and blow the Skin, make it Red, and even raise Blisters thereon. See Visceratic.

The principal simple Epistles are Peculiar, Caric, Mufard, Tapp, Chapel, Guipou, &c. and that of Piffagros, Cantabrides, &c.

The Word is Greek, form'd of α gay and ως, ο, I read.

EPISTATES, in Antiquity, a Commander, or Perfon, who has the Direction and Government of a People.

The Term is of considerable Use, in speaking of the Actions of the Church; where the Epistles was the Senator in Command for that Day, or whole Turn it was to precede that Day.

The Constitution was this: The Ten Tribes of Athenoi, elected every Year by Lot, each of them fifty Senators; which made a Senate of five Hundred. Every Tribe had the Precedence in its Turn, and surrender'd it again, successively, to another. The fifty Senators in Office were called Prostates, the particular Place where they attended Prytanien; and the Term, or Duration, of their Office, was thirty five Days, Prytanien. During these thirty five Days, they conducted the Government, and this period was called the Name of Prostates. And of these Prostates, there was one to precede each Day of the Week, under the Title of Prytanien.

No Person was allow'd to hold this Office more than once in his whole Life; left he should fall too much into the Taint of Domination. The Senators of all the other Tribes, were call'd to the Council according to the Order of the Lot, and given them; but the Prytanien alone convey'd the Assemblies; the Prostates, laid the Business before them; and the Epistles, took their Votes and Opinions.

It would be add'd, that of the Ten Prostates, of each Week, there were but few that could precede, each his Day, in Quality of Epistles. The ten Prostates elect'd the ten Prytanien. See Prytanien.

This Office is deriv'd from the Greek, Ε, father, over, and ι, so, I stand.

EPISTEMONARCH, a Dignitary in the Greek Church.

The Epistemonarch was appoint'd to watch over the Doctrines of the Church, and to inspect every Thing relating to the Faith, in Quality of Censor thereof.

His Office and Power much to that of Magister Pelagianus, Painelius, &c.

The Word is deriv'd from the Greek, Ε, father, ι, see, ο, I know, of Ε, Science, Science, Knowledge, and α, command, Government.

EPITHEM, a Letter missive. See LETTER.

The Term Epistle is now scarce used, but for Letters written in Verse; and Letters Descriptive. See Epistle.

In speaking of Letters written by Moderns, or rather, in the modern Languages, we never use the Word Epistle. Thus, we say, the Letters, not Epistles, of the Cardinal's Office; of Vracs, or Vrahy of Euxid, &c. But those wrote by the Ancients, or rather in the Ancient Languages, we call Epistles: As the Epistles, of Cato, of Strabon, Seneca, Buschanes, Lummis, &c. Of the Greek, St. Jerome, &c. The Epistles of St. Paul, St. Peter, St. John, &c. to the Romans, Corinthians, &c.

The Word is form'd of the Greek, Ε, father, miss, ι, I stand.

EPISTOLARY, a Term chiefly used in the Phraeo Epistolary State. See STYLE.

The Word is, sometimes, also applied to Authors who have written Epistles or Letters: The principal Epistolary Authors, are Sozomen Apollinaris, Tuchi, the younger Pliny, Senea the Philosopher, Petracch, Politian, Buschanes, Euxid, of the Greeks, Thucydides, Alcman, Pindar, Ptolemeus, Lumi, Lumm, &c. See lapid. See Caro, Caro.

EPITOMIUM, in Hydraulics, a Plug, or Inbruastment by the Application whereof, an Aperius may be open'd, and shut at Pleasure.

EPITROPEUS, from Ιτρος, corrosion, I turn about; the same with Cardo. See CARDO.

EPISTYLE, in the ancient Architecture, a Term used by the Greeks, for what we call Architrave, viz. a Mufive of Stone, or Piece of Wood, laid immediately over the Capital of a Column. See ARCHITRAVE.
The Epistle is the first, or lowest Member of the Epistle. See Epistle.

The Word is derived from the Greek, επιστολή, upon, and σύν, admiss. See Epistle.

EPISTULAE, in the sense of a Monumental Inscription, in Honour, or Memory, of a Deceased, or an Inscription engraved, or cut, on a Tomb, to mark the Time of a Person's Decease, his Name, Family, and usually some Eloquent of his Virtues, or good Qualities. See Monuments, Tomb, &c.

The Style of Epistles, especially those composed in Latin, is singular. See Latin.

The Suitors. Epistles were only allowed to People who died in Battle. Before he made a different Class of Epistles, not so very ample, but exceedingly well chosen. Fal. Lethe, has likewise given a Collection of the like Kind, in French; cant, Tragor des Epistres. See also an English, and a Latin, a Collection of Epistles, in French, by Tailor of Paris, of which the First Edition was published in 1724, and the Second, in 1725. See also the Collection of Epistles by Tailor of Paris, of which the First Edition was published in 1724, and the Second, in 1725. See also the Collection of Epistles by Tailor of Paris, of which the First Edition was published in 1724, and the Second, in 1725.

An Epistle is said to be yet wanting to the Duke of Marlborough's Monument; the Value of 500 Pounds was offered by his Dowager, to him that should compose it worthy of such a Personage.

In Epistles, the dead Person is sometimes introduced, by Way of Apology, speaking to the Living; of which we have a fine Instance, worthy the Jovians Age, wherein the dead Wife thus speaks to her surviving Husband:

Inamorata pari: sed tu felicior, Amos
Vox tua, Conjux opinis, sum neque.

The Word comes from επιστολή, upon, and σύν, admiss., September.

See September.

The French have a Proverb, Menteur comme une Eripe, a Lying like an Eriphile, in Allusion to the Eriphiles ordinary condition therein, which are not always over just.

Eripe, is also applied to certain Eriphes, either in French, or in Spanish, compos'd without any Intent to be engraven on Toms.

In the Collection of Epigrams, we have Abundance of such Eripe; some of them ludicrous and satyrisical. See September.

For a Species, we shall here add a very beautiful Eripe, compos'd by Mr. Cowley, on himself, to be put on a little County House, whither he retreated from the Court and Town, to spend his last Days.

His, O Vator, sub Lave parvulo,
Comitum hic de Constanti, hic jaceat
Defunctus manuum laboris
Soror, supercanonag, Vita;
Non indecora pauperis ivi,
Eius uestris obvius est
Fecit, duellis optiniis
Deiuitis, animus belli.
Paltis ut illum dicere mortuum,
Eur suum quam multis sufficit
Vos neque amictis, Vator,
Terra sit illa levis, prescire.

His stars flares,火灾 breves Rofas
Nec vix gavis Mortus robus
Herbif, obvius corum
Vatis obvius clarem Calamem.

EPITAPHIS, in the ancient Poetry, the second Part, or Division of a Dramatic Poetry, wherein, the Plot, or Action, proposed, and enter'd upon, in the first Part, or Prologue, was carried on, height'ed, warm'd, and work'd up, till it arrived at its State, or Height, call'd the Carpephi. See Prologue.

This Division is laid aside in the Modern Drama; in Jersey, where our Plays are divided into Acts. See Act.

The Epitaphi might, ordinarily, take up about our second or third Act. See Tragedy.

The Word is pure Greek, ἐπιτάφιον τοῦ τάφου, Inlaid, I heighen.

EPITAPHS in Medicine, is sometimes used for the In- crease, or Growth, and heightening of a Disease; or a Paroxysm, or an Access for Fever, only Fever.

EPITHALAMICUM, in Poetry, a Nuptial Song; or a Composition, usually in Verse, on Occasion of a Marriage between two Persons of Emience.

The Topicks of which are often, are the Prais of Marriage, and of the Married Couple; with the Pom and Order of the Marriage Solemnity. It concludes, with prays to the Gods for their Prosperity, their happy Offspring, &c. Conclusively, in Epithalamia, and the Gavetal Merinos, all the Moderns.

The Word is form'd of επί and ψαμμικός, Bridegroom, Bridesmaid.
The Church of the East and West; Dionysius, to complete the Church of the East, and to adopt a new Form of the Year, with a new general Easter, which in a few Years Time was generally admitted.

Dionysius began his Account from the Concepcion, or Incarnation of Jesus Christ; or from the Day, or Anunciation; Which Method still obtains in the Dominions of Great Britain, and there only; so that the Dionysian, and English Epocha, is the same. In the other Countries of Christendom, and in the rest of the World, the Christmas or Dionysian Epocha is in the Court of Rome, where the Epocha of the Incarnation still obtains for the Date of their Bulls.

It must be observed, that the principal Epocha of Dionysius is charged with a Milestone: The common Opinion is, that it places our Saviour's Nativity a Year too late; or, that he was born the Winter preceding the Time prescribed by Dionysius.

But the Truth is, the Fault lies on the Side, who misinterpreted Dionysius, and whose Interpretation we follow; as has been done by Ptolemy, from Dionysius's own Epitaphs. For Dionysius began his Cycle from the Year of the Julian Period 1714; but his Epocha from the Year 1713, wherein the vulgar Easter epiphon of Christ has been incorruptible.

The Year, therefore, according to which the vulgar Easter Epocha is the 16th Year of Christ, according to Dionysius's Era, is the a.c. So that the present Year, which we call 1725, for the East, 654 for the West, is the Year 70 for the Dionysian Chronologists, instead of one Year, will have the Error two.

To this vulgar Era, a, as a sure, fixed Point, Chronologies use to refer themselves; but it is not one nor even of one, but what is controverted: So much Uncertainty there is in Time. We shall exhibit them as reduced to the Julian Period.

Easter from the Creation, or Orbit condit, according to the Computation of the Jews, call'd 4610 the Jewish Era, is the Year of the Julian Period 5935; answering to the Year before Christ 5761; and commences on the 17th Day of October.

Hence, subtracting 952 Years from any given Year of the Julian Period, the Remainder is the Year of the Jewish Era, and the Year of the Jewish Epocha, corresponding thereto. Thus, e. g., the present Year being the 6456th Year of the Julian Period, it is the 5486th Year of the Jewish Era, or since the Creation of the World.

This Epocha is still in Use among the Jews.

The Epoch of the Creation, used by the Greek Historians, is the Year before the Julian Period 5785; answering to the Year before Christ 5570.

Hence, to any given Year of the Julian Period, adding 785; the Sum gives the Year of this Epoch, e. g., 4455 being the present Year of the Julian Period 1725, 3710 is the present Year of this Epoch, or the Age of the World, according to this Computation.

The Author of this Epoch, is Julius Africanus, who collected it from the Greeks, from the Year 1714, for the East, 6458, for the West; and it was introduced into civil Use, 8 Years were added to it; so that, every Year thereof divided by 15, might exhibit the Indiction, which the Eastern Emperors used in their Churches and Councils.

The Epoch of the Creation used by the later Greeks, and Ruffius, is the Year 725, before the Julian Period; for the Greek Era, corresponding thereto, was fixed at the 16th Day of September. To this Ruffius, having lately admitted the Julian Calendar, begin their Year from the 1st of January.

Hence, adding 795, to the Year of the Julian Period, the Sum gives the Year of this Epoch. Thus, e. g., the Julian Period of the present Year being 6455, the present Year of this Epoch, i. e. the Year from the Creation, on this Footing, are 3710. Again, from the present Year 725, subtracting 5588; the Remainder is the Year of the common Era 1725.

This Epoch was used by the Emperors of the East, in their Diplomats, &c. and thence also call'd the Civil Era of the Greeks. In Reality, it is the same with the Epoch of the Conquastorius Period; whence some call it the Epoch of the Period of Conquastorius. See Period.

The Alexandrian Epoch of the Creation, is the Year 283, before the Christian Era, answering to the Year before Christ 5494; and commencing on the 29th Day of August.

Ruffius, adding 595, to the present Year of Christ 1725, the Sum 2320, is the present Year of this Epoch, or Years elapsed since the Creation, according to this Computation.

This Epoch was first concerted by Ptolemy, a Monk of Egypt, to facilitate the Computation of Jewish Era, whence some call it, Greek LXXth Epoch.

U. *
The Epophe of the Creation is the year of the Julian Period 456; answering to the year before Christ 368: common to the Hebrew and Christian eras.

Hence, subtracting 456 from the Julian Period of the present year 64285, or adding 4428 to the present year of Christ, the Reform 5935, is the present year of this Ephod.

This Ephod is used in Eusebius's Chronicon, and the Roman Martyrology. See Creation.

Epophe of Olympiads is the year of the Julian Period of the year 579, before Christ 3, and the year 490 from the Creation; beginning at the Full Moon next the Summer Solstice. And each Olympiad contains four years.

This Ephod is very famous in ancient History: It was used principally by the Greeks, and had its Original from the Olympic Games, which were celebrated at the Beginning of every fifth Year.

Opening of Rome, 753 B.C. U.C. is the year of the Julian Period 5961, according to Varro; or 5962, according to the Festi Calendarium, answering to the year Christ 755, or 754, and beginning the 18th of April.

Hence, if the Years of this Ephod be less than 754, subtracting cm from 754, or 753, you have the Year before Christ. And, on the contrary, if they be more than 754, adding cm to the same, the Sum is the Number of Years since Christ. Lastly, adding the Year before Christ, to 753, or 754, the Sum will give the Year of this Ephod. In the same manner, the Years of the Ephods are found.

Thus, e.g., the present Year 1735, according to Varro, is the Year of Rome 2488.

Ephod of Nabothizer, is the Year of the Julian Period 4997, answering to the Year of Christ 772, commencing on the 5670th Day of February.

This Ephod takes its Denomination from its Intitute, Nabothizer King of Edom; and is used by Ephod in his Astronomical Observations, by Confessors and others.

Diesollan Ephod, or Ephod of Martyrs, is the Year of the Julian Period 5097, answering to the Year of Christ 787, commencing on the 1670th Day of July.

This Ephod is used by the Turks and Arabs, and even all who profess the Macedonian Faith: It was first introduced among the Turks by the third Emperor of the Turks.

The Astronomers, Aboraphan, Aboraphi, Alboraph, and Ulrich Biegh, refer Nabothizer's Flight to the 15th of July; but all the people who use the Ephod, agree to the 7th.

Ephod of the Selcuchians, used by the Macedonians, is the Year of the Julian Period 4404; answering to the Year before Christ 712. See Seleucia.

Teaching, or Perifon Ephod, is the Year of the Julian Period 5345; answering to the Year before Christ 672; and commencing on the 1670th of June.

This Ephod is taken from the Death of Tendogertis, the last King of Perifon, slain in Battle by the Saracens. Julian Ephod, or Ephod of Julian Years, is the Year of the Julian Period 4408, answering to the Year before Christ 715.

This Ephod had its Origin from the Year of the Reformation of the Calendar under Julius Caesar; fall'd the Year of Confusion. See Year.

Saracen Ephod, is the Year of the Julian Period 4884; answering to the Year before Christ 750. Constantinople Ephod, or Ephod of Constantine, was the Year of the Julian Period 5049; answering to the Year before Christ 785.

Other memorable Ephods are, that of the Deluge, in the Creation 1656; The Birth of Abraham in 2697; The Flight of Lot, or Departure out of Egypt, in 2656; The Building of the Tower of Babel, in 2523; And the Destruction of the Temple in the Year of Christ 706: The taking of Constantinople by the Turks, in 1453.

EPODE, in Poetry. In the Lyric Poetry of the Greeks, the Epophe is the third Part, or End of the Ode: Their Ode, or Song, being divided into Strophe, Antistrophe, and Epophe. See Ode.

The Epophe was sung by the Priests, standing still before the Altar, after all the Turnus and Returns of the Strophe and Antistrophe.

The Epophe was not confined to any precise Number, or Kind of Verses, as the Strophe and Antistrophe were. See Strophe, Antistrophe, Epophe.

But when the Ode contained several Epophe, Strophes, &c, they were all alike.

As the Word Ephod, then, properly signifies the End of the Song; and as in Odes, what they called the Epophe, that was the End of the Ode. By this Reflexion, a Verse, for a little Verse, which being put after another, clotted the Period, and fill'd the Sense which had been fulfilled in the first Verse, to be call'd Epophe, &c.

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The Signification of the Word is extended further: Ephod being become a General Name for all Kinds of little Verses, that follow one or more great ones.

Thus, the Term, which is a Measure, is derived from a Pentamer, which is an Epophe, after an Hexamer, which in Reflect thereof is a Pro-ode.

EPOEMIS, in Anatomy, the Upper Part of the Shoulder, reaching up to the Neck. See Shoulder.

Some Authors apply the Word Epoemis to the Upper Part of the Os Humeri: But the ancient Greek Physicians only use it for the muscular, or delthy Part, placed as a substitute for the Abomasum.

The Word is Greek, *Epioimis*, which signifies the same Thing.

EPOEPA, Epos, in Poetry, is strictly the History, Allegory, or Action, which makes the Subject of an Epic Poem. See Action and Fable.

In the common Use of the Word, however, Epophe is the same with Epois, and Epophe is the *Poeis* with Epois, as follows on the subject of *Poeis*; or, that makes the Subject of an Epic Poem. See Action and Fable.

EPULO, in Antiquity, a Minister of Sacrifice among the Romans. See Sacrifice.

The Pontiff being enabled to attend all the Sacrifices made at Rome, to so many Gods as were adored by the People; appointed three Ministers, whom they called *Edutores*, on account of their attendance at the Care and Management of the Epophe, Feasts in the column, and Festivals.

To them belong'd the ordering and serving the sacred Banquet, offered on so Occasion to the People, such as the Pontiff himself, like the Pontificate. Their Number was at length augmented from Three to Seven, and afterwards by Cesar to Ten.

Their first Establishment was in the Year of Rome 178 under the Consulship of L. Furius Purpurace and M. Claudius Marcellus.

EPULO, in Antiquity, a Banquet, a holy Feast prepared for the Gods. See Feast.

The Gods were commonly laid upon a Bed, and were served as if they had been very hungry; to perform which, was the Function of the Ministers of Sacrifice, hence called *Eduotores*. See Epois.

EPULE, in Anatomy, is the Weight of the movable Body proceeds with the same continued Velocity, neither accelerated nor retarded. See Motion.

EQUAL, or Term of Relation between two or more Things, by which we understand their Quantity, or Quality. Without defines Equal to be those Things which may be substituted for each other, without any Alteration of Quantity. In the same Sense, when we are Equal to the same third, we are Equal to each other. And again, if, or from Equal, you add or subtrah Equal, the Remainders will be Equal. See Equality.

Equal Circles, in Geometry, are those whose Diameters are Equal. See Circle.

Equal Angles are those whose Sides are inclined alike of what Kind soever, or are measured by similar Parts of their Circles. See Angle.
EQUITY, are those whose Area's are Equal, which are equal, or not. See Fig. 1. The Segments of a Sphere, or Circle, are equal. See Concurrency, or Convexity, when they have the same Ratio, or Proportion to the Diameters, or Circles wherein they are contained. See SOLIDS.

Equal Solids, are those which comprehend, or contain each as much as other; or whose Solidities and Capacities are equal. See SOLIDS, or HYPERSOLID.

Equal Hyperbolas, are those whose Ordinates to their indeterminate Axes, are Equal to each other; taken at Equal Distances from their Vertices. See HYPERBOLA.

Equal Hyperbolical Curves, are those whose Areas are equal. See Curves.

Equal Hours, are those whose areas are equal. See Hours.

Equal Geometrical Ratios, are those whose Parts are similar, or similar Parts of greater. See Ratio.

Equal Arithmetical Ratios, are those wherein the Difference of the two is Terms, is equal to the Difference of the other two Terms. See Ratio.

In Opticks, we say, that Things seen under Equal Angles, are Equal. Equal Parts of the same Interval, or Magnitude, if unequally distant from the Eye, appear unequal. Equal Objects, and at Equal Distances, only the one placed directly, and the other obliquely, seem unequal; and that placed directly, the bigger. See VISION.

EQUALITY, in Astronomy. The Circle of Equality, or the Equant, is a Circle used in the Ptolomeian Astronomy, to account for the Eccentricity of the Planets, and reduce them more easily to a Calculus. See EQUANT.

PROPORTION OF.EQUALITY, is that between two equal Numbers, or Quantities.

PROPORTION OF EQUALITY evenly dyverged, or as A:B = C:D, is equal to A : B = C : D, or A : B = C : D. See PROPORTION.

PROPORTION OF EQUALITY evenly divided, or A:B = C:D = E:F, or A : B = C : D = E : F, is equal to A : B = C : D = E : F. See PROPORTION.

Thus, 2 + 2 = 4, i.e. 2 + 2 = 4, are equal.

This Character was first introduced by Horie. Des Cartes, and some after him, in Lieu thereof use .= Thus, 2 + 2 = 4, 0 = 4 = 2 + 0, signifies that 0 = 4 = 2 + 0. See PROPORTION.

Proportion of Equality, at an Advantage, by changing the letters into another, whereby the two Members of the Equation, i.e. the two Quantities compared together, and connected by the Sign of Equality, are rendered Equal.

Thus, in the Equation a = b = c = d, supposing a = c = b = d, we change x into c, and by this Substitution arrive at the Equation b = c = d.

In the Solution of a Numerical Problem, to be rendered rational, if there be only one Power to be equal'd to a Square, or other higher Power, it is called simple Equality.

When there are two Powers to be equal'd, each to a Square, or other given Power, the Character has given us a Method for double Equality, and Halls, another for triple Equality, in his Dictionaire, and Reductions.

The Character denotes in Astronomy, a Circle, imagined by Astronomers, in the Plane of the Deficient, or Excentric for the regulating and adjusting of certain Motions of the Planets, or other Bodies. See EQUATION, or EQUATION, in Astronomy, an Expression of the same Quantity, in two different, that is, different, but Equal Terms or Denominations. As when we say, 2 + 2 = 4, 0 = 4 = 2 + 0 = 4. See PROPORTION.

Stilnef defines Equation to be the Ratio of Equality, between two Quantities differently denominated: As when we say: 1 Penny = 1 Shill. = 12 Pence. = 240 Farthing. Or, b + c = d + e. Or, 12 = 2 + 2. See EQUITY.

Hence, the Reduction of two heterogeneous, or dissimilar Quantities to the same Value, i.e. to an Equality, is called the bringing them to one.

The Character, or Sign of an Equation, is = or =, or =, See PROPORTION.

The Resolving of Problems, by Means of Equations, is the Business of Algebra. See ALGEBRA.

The Terms of an Equation, are the several Quantities, or Processes, by which the Equant is increased or diminished, together by the Signs + and -. Thus, in the Equation 3 + 2 = 4, the Terms are 3, 2, and 4. And the Tenor of the Equation is, that the Quantity represented by b, is equal to two others represented by c and d. See Terms of Equations.

The Root of an Equation, is the Value of the unknown Quantity, into which the Solution of the Equation is reduced, = x; the Root will be y (a + b). See Roots of Equations.

Equations are divided with Respect to the Powers of the unknown Quantities, into Simple, Quadratic, Cubic, &c. A Simple Equation, is that wherein the unknown Quantity is only of one Dimension, or the first Power, See PROPORTION.

A Quadratic Equation, is that wherein the unknown Quantity is of two Dimensions, or the second Power. See EQUATION.

A Cubic Equation, is that wherein the unknown Quantity is of three Dimensions. As x = a + b, &c. See Cubic Equation.

If the unknown Quantity be of four Dimensions, as x = a + b, &c. the Equation is called a Biquadratic; if of 5, a Surdquadric, &c. See Power.

Equations are consider'd two Ways: Either, as the ultimate object, which we assign ourselves in the Solution of Problems; or as Means, by the Help whereof, we arrive at those final Solutions. See Solution and Problem.

The character which denotes the first kind of Equation, is the Symbol of a unknown Quantity, intermed'd with other known Quantities. Those of the latter Kind, consist of several unknown Quantities, which are to be compared, and connected together, and from them from the whole, all are a new Operation, whether the one unknown Quantity sought, is mix'd with the known.

To get the Value of which unknown Quantity, the Equations are generally taken from various Ways, till it be brought as low, and render'd as simple as possible.

The Doctrine and Practice of Equations; that is, the deducing of the several Steps, or Parts, of the Denominations, the denominating of the several Quantities, or Expressions in proper Signs, or Symbols. The character which denotes the Quantity thus denoted in an Equation, is the reducing that Equation to its lowest and simplest Terms. To which 4. may be added the constructing of the Equation, or representing it in Geometrical Lines. We proceed to each in its Order.

With Respect to the fig. 5, a Question, or Problem, being proposed; we conceive the Thing sought, or required, as being expressed by one of the Letters, a, or more, usually by one of the left Letters the Alphabet, x or y, or z, noting the other known Quantities, by the Conoformis, or the Beginning Letters of the Alphabet, a, b, c, &c. and the Quantity sought, a, b, c, &c.

The Question being thus stated in Species; it is consider'd whether, or not, it be subject to any Restrictions, i.e. whether it be determinate, or not, which is found by the Rule.

1° If the Quantities sought, or required, be more than the Number of Equations given, or contained in the Question: it is indeterminate, and capable of innumerable Solutions. The Equations are found, if they be not expressly contained in the Problem itself, by the Theorems of the Equality of Quantities.

If the Number given, or contained in the Problem, be just equal in Number with the unknown Quantities; the Question is determinate, or has only one Solution.

2° If the unknown Quantities be fewer than the given Equations, the Question is yet more limited, and sometimes discovers it less impossible, by some Contradiction between the Equations, or by the Determination of the Problem. To bring Questions to Equations. Now, to bring a Question to an Equation, that is, to bring the several mediate Equations, to one final one: the principal Thing to be attended to, is to express all the Things given or required by means of the first Letter, refer to which, it is to be consider'd, whether the Propositions, or Sentences, wherein it is express'd, be all of them fit to be noted in Algebraic Terms; as our Conceptions with the Method of Characterizing the Quantity, as is generally the Case in Questions about Numbers, or abstract Quantities; then let Names be given both to the known and unknown Quantities, as far as possible; and thus the Draft of the Question may be cou'd, as we may
may call it, in the Algebraical Language. The Conditions, thus translated to Algebraic Terms, will give as many Equations as are necessary to solve it. To illustrate this by an instance: Suppose it to require to find three Numbers in continued Proportion, whose Sum is 20, and the Sum of the Squares 140; putting \( x \), \( y \), \( z \), for the Names of the three Numbers sought, the Quelation will be translated out of the Verbal to the Symbolical Expression, thus:

**The Quelation in Words.**

Required three Numbers, on these Conditions.

There must be continually proportional.

The Sum must be 20.

And the Sum of their Squares 140.

**In Symbols.**

\[
\begin{align*}
x & = y, \\
y & = z, \\
z & = 20, \\
x^2 + y^2 + z^2 & = 140.
\end{align*}
\]

Thus, the Quelation is brought to these Equations, viz.

\[ x = y, \quad y = z, \quad x + y + z = 20, \quad x^2 + y^2 + z^2 = 140. \]

By the Help whereof, \( x \), \( y \), \( z \), are to be found.

The Solutions of Quelations are, for the most Part, of much more expeditid and artificial, by much the unknown Quantities, you have at first, are the fewer. Thus, in the Quelation proposed, putting \( x \) for the first Number, \( y \) for the second, \( z \) will be the third Proportional; which being put for the third Number, bring the Quelation into Equations as follows.

**The Quelation in Words.**

There are found three Numbers in continual Proportion.

Whole Sum is 20.

And the Sum of their Squares 140.

**Symbolically.**

\[
\begin{align*}
x & = y, \\
y & = z, \\
x + y + z & = 20, \\
x^2 + y^2 + z^2 & = 140.
\end{align*}
\]

You have therefore the Equation \( x + y + z = 20 \), and \( x^2 + y^2 + z^2 = 140 \), by the Reduction whereof, \( x \) and \( y \) are to be determined.

Take another Example: A Merchant increases his Estate annually by a third Part, above 100 L. which he spends yearly in his Family; and after three Years he finds his Estate to have increased, of what is worth! To solve this, it must be observed that there are (or, if you bid) several Propositions, which are all thus found out and laid down.

**In English.**

A Merchant has an Estate of 100 L. Out of which the first Year he expends \( x \) L. and the second Year \( x + \frac{1}{3}x \) L., and the third Year \( x + \frac{1}{3}x + \frac{1}{3}\left(x + \frac{1}{3}x\right) \) L., and so on, and there remains \( 100 - x - \frac{1}{3}x - \frac{1}{3}\left(x + \frac{1}{3}x\right) \) at the end of the second Year, and \( 100 - x - \frac{1}{3}x - \frac{1}{3}\left(x + \frac{1}{3}x\right) - \frac{1}{3}\left(100 - x - \frac{1}{3}x - \frac{1}{3}\left(x + \frac{1}{3}x\right)\right) \) at the end of the third Year, and so on. And he becomes as rich as at first, by the end of the seventh Year. Therefore the Quelation is brought to this Equation,

\[
100.27 = x,
\]

by the Reduction whereof you will find

\[ x = 14.00. \]

Thus, if we apply it to 27, and you have 64 \( x = 13.800 \), 154 \( x = 13.800 \), and 64 \( x = 13.800 \), and dividing by 10, you have \( x = 14.00 \). So that the Value of his Estate at first was 14.00 Lib. It appears then, that to the Solution of Quelations about Numbers, the Relations of artificial Quantities; there is scarce any Thing more required, but to translate them out of the common, into Algebraic Language; i. e. into Characters, proper to express our Ideas of the Relations of Quantities. Indeed, it might sometimes happen, that the Language wherein the Quelation is stated, may seem unfit to be rendered into the Algebraical; tho' by making a few Alterations therein, and attending to the Sense, rather than to the Sound of the Words, the Translation becomes easy enough. The Difficulty here results merely from the Difference of Idioms, which is as observable between mult. Languages, as between the common and Symbolical.

However, to render the Solution of such Problems a little more easy and familiar, we shall add an Example or two to the preceding.

1. Given, the Sum of two Numbers \( a \) and \( b \), and the Difference of their Squares \( a-b \); to find the Numbers themselves.

Suppose the letter, \( x \), the other will be \( a-x \) and their Squares \( x^2 \) and \( a-x \). Whole Difference, \( a-x \) is called \( b \). Consequenly, \( a-x = b \). Whence, by Reduction, \( a = b + x \).

2. \( (a - b)^2 = a^2 - 2ab + b^2 = x \).

E. g. Suppose the Sum of the Numbers, or \( a \), to be 8, and the Difference of their Squares, or \( b \), 16; then will, \( a - b = 8 - 16 = 8 \), and \( a = b + 8 \). Therefore the Numbers are 4 and 8.

2. To find three Quantities \( x \), \( y \), \( z \), and the Sum of each Pair thereof \( a \) given. Suppose the Sum of the Pair \( x \) and \( y \) to be 3; that of \( x \) and \( z \), \( b \), and that of \( y \) and \( z \), \( c \). If \( x = 3, y = 1 \), and \( z = 2 \), we have two Equations \( x + y = 3, \quad z + y = 2 \); and \( x + y + z = 5 \). Now, to exterminate two of the unknown Quantities, \( c \), \( y \), \( z \) and take away \( x \), both from the first and second Equations, and we shall have \( y + z = x \), and in the third Equations; and we shall have \( x + y + z = 5 \).

3. To divide a given Quantity into any number of Parts \( x \), \( y \), \( z \), such that the greatest \( x \) shall exceed the least by any given Difference. Suppose \( a \) a Quantity to be divided into four such Parts, the first and smallest whereof is \( x \), the Excess of the Second Part above this, \( y \), the Excess of the third Part above \( y \), \( z \), and the difference between the second Part \( x - y \) the third, \( x + y - z \) the fourth. The Aggregate of all which \( x + y + z + x - y \) is equal to the whole Line \( a \). Now, taking away from each \( b \), \( c \), \( d \), \( e \), there remains \( a = b + c + d + e = x + y + z \). Suppose \( c \), \( g \) a Line of 20 Feet, to be divided into 4 Parts, in such manner, as the Excess of the second above the first may be \( b \), of the third, \( c \), and of the fourth \( d \). Then the four Parts will be \( x = b + c + d \).

4. Then, as \( b + c + d = 20 \), \( b = 20 - (c + d) \).

5. The Power or Strength of one Agent being given; to determine how many such Agents will produce a given Effect \( a \), in a given Time \( b \).

Suppose the Power of the Agent such, that the relation \( \frac{a}{b} \) is equal to \( c \), the Time \( d \), then, as the Time \( e \), to the Time \( b \), so is the Effect \( f \), which the Agent can produce in the Time \( d \), to the Effect \( f \), it can produce in the Time \( b \), which accordingly will be \( f \). Then, as the Effect of one Agent \( f \) is to the effect of all \( a + b \), so is that one Agent, to all the Agents. Consequently the Number of Agents will be \( \frac{a}{f} \). Thus, e. g., if a Clerk, or Writer, in 8 Days Time, transcribes 14 Sheets; how many such Clerks are required to do the same work in 2 Days? Ans. 4. For if 8 be substituted for \( b \), 14 for \( a \), and 2 for \( d \), the Number \( f \) will be 3. Suppose the Power of the Agents, A, B, C, such as that in the Times 8, 9, 10, they would produce
If the Baf be bought, I put $AB = x$, $CD = a$, and $BC = b$; or $DB = b$. Then, drawing AC, as the Triangle $ABC$ are similar, therefore $CE : CB = b : b$.

And since the Angle $CEB$ is right, $CE = b$. And $CE = b$. Therefore $BE = b$; and $CE = b$.

And since the Angle $CEB$ is right, $CE = b$. And $CE = b$. Therefore $BE = b$; and $CE = b$. Which Equation being reduced, gives the Diameter required; $x$.
To facilitate this Discovery, or the Relations of the Lines of Intersection, there are several Things that contribute: as first, the Addition and Subtraction of Lines; since from the Values of the Parts, you may obtain the Values of the whole; or from the Value of the whole, and the Value of one of the Parts, you may determine the Value of the other Part. Secondly, by the Proportionality of Lines; since, as above supposed, the Rectangle of the mean Terms, divided by either of the Extremes, gives the Value of the other; or you may determine the Value of the Volume of the Whole, if the Values of the Proportionals be first had, we make an Equality (or Equation) between the Rectangles of the Extremes and Means. But thirdly, by the Consequence of the Simplicity of Triangles; which, as it is known by the Equation of their Angles, the Analyst ought in particular to be conversant in. In Order to which, 'twill be excusable in you, to lay aside the Sonatas of two, three, five, 15, 15, 15, and 55, 55, 55, 55, and of Prop. 4, 5, 6, 7, 8, 9, 10, 11, 12, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, and 31, Lib. III. To which may be added, the of 5th Prop. Lib. VI. or the 25th and 27th Prop. Lib. III. Thirdly, the Calculus presented by the Addition, or Subtraction of Squares, viz. in right angled Triangles, we add the Squares of the lesser Sides, to obtain the Square of the greater; or from the Square of the greater Side, we substract the Square of one of the lesser, to obtain the Square of the other. On which few Foundations, if we add to them Prop. 12. of the VIth Elem., when the Bisects relates to Superficies, and also some Propositions taken out of the first Book of the Elements, and the first Book of the Arithmetick in Question; the whole analytic Art, as to right-lined Geometry, depends. Indeed, all the Difficulties of Problems may be reduced to the sole Composition of Lines out of Parts, and the Theorems out of Propositions, so that an Occasion to make Use of other Theorems; because they may all be reduced into these two, and consequently into the Solutions that may be drawn from them.

3. Of the Solution of Problems. The Schemes are oft times to be further con- cluded, by producing some of the Lines, till they cut others, or become of an assigned Length; or by drawing Lines from Points, parallel to Angles of Angles, or some remarkable Points; or by conjuring some Remarkable Points; as also, sometimes, by constructing them after other Methods, according as the State of the Problems, and the Theorems, which are to be applied, shall prescribe.

As for Example: If two Lines that do not meet each other, make Angles, with a certain third Line; perhaps we produce them, till that when they concur, or meet, they shall form a Triangle, whose Angles, and consequently the Ratio of their Sides, shall be given; or if any Angle is given, or be equal to any one, we often compound some Triangle, and from thence to some other, and that by producing some of the Lines in the Scheme, or by drawing a Line subtending an Angle. If the Triangle be an oblique-angled one, we often resolve it in right-angled Lines, and the Constructions are more simple. If the Bisects concern multilateral, or many figured Figures, we resolve them into Triangles, by drawing diagonal Lines, and so in others: always aiming at this End, viz. that the Problem shall be resolved either into given, or familiar, or right angled Triangles.

Thus, in the Example proposed, draw the Diagonal $BD$, that the Trapezium $ABCD$, may be resolved into the two Triangles $ABE$ and $ECD$, an obtuse-angled one, and $ABD$ an acute-angled one, (Figure 8.) Then resolve the ob- lique-angled one into two right-angled Triangles, by letting fall a Perpendicular from any of its Angle $BC$ or $D$, and from the Point $E$ con- duced to, that $BE$ may meet it perpendicularly. But since the Angles $B$ and $C$ of $BCE$ and $CDB$, make the mean which is required; and $E$ the Perpendicular, (by Prop. 28. Elem.) as also $BCE$ and $CDB$, the Angle of the right-angled Triangle $ABE$ is the $A$ of the right-angled Triangle $ABD$, conceived to be equal; consequently the Triangles $BCE$ and $CDB$ are similar. And so the Computation (by inference) as to the Angles $A$ and $B$, may be thus carried on, viz. $\hat{A}$ and $\hat{B}$, (by Prop. of the right-angled Triangle $ABD$) give you $A$, $a$, $B$, $b$, and $C$, $c$; (by Reason of the similar Triangles $BCE$ and $CDB$) give $D$, (by Prop. 38. Elem.) give $E$, and $F$; (by Reason of the right-angled $BED$) give $E$, and $F$; (by Prop. of the right-angled $BED$) give $F$; (by Prop. of the right-angled $BED$) give $E$, and $F$; (by Reflex. of the right Angle $CBD$) and if you have $E$ and $F$, then you have $D$, (by Reflex. of the right Triangle $BFE$) and if you have $D$, the Lines $B$, $C$, $E$, $F$, $B$, $C$, $A$, $B$, are continual Proportionals. Moreover, from the given Position of $C$, $D$, $E$, $F$, $F$, $D$, $B$, $C$, there is no Angle of the right Triangle $EDF$, which (superior) to $C$, and you have $B = \frac{e}{D}$, and $F = \frac{d}{B}$, and $C = \frac{c}{A}$, and $A = \frac{a}{B}$, and $E = \frac{e}{B}$.

Therefore $b - \frac{e}{D} = \frac{a}{B} - \frac{d}{E}$, an Equation which (by squaring
squared, and multiplying by $aa - xx$ will be reduced to this Form: 

$$x = \frac{bd + cs}{ba + cc}.$$ 

Whence, lastly, from the given Quantities $a$, $b$, $c$, and $e^2$ may be fixed by Rules given hereafter; and at that Interval, or Distance $x$ or $BC$, a right Line drawn parallel to $AD$, will cut $CB$ in $E$, the Point of Intersection of the Geometrical Descriptions, we use Equations to denote the Curve Lines by; the Computations will thereby become as much shorter and easier, as the gaining of $E$ is. Thus, suppose the Intersection $C$, of the given Ellipses $ACE$, Fig. 10, with the right Line $CD$ given Position, sought: To denote the Ellipses, take some known Equation proper to it, as $e = c - x$, or $e = c - y$, where $x$ is indifferently put for any Part of the Axis $AB$, or of $AB$, and $y$ for the Perpendicular $BC$, or $BC$, terminated at the $C$, and $r$ and $q$ are given from the given Species of the Ellipses. Since therefore $CD$ is given in Position, $AD$ will be also given, which call $a$ and $BD$ will be $a - x$, also the $BD$, whence we can show you the contrary as $b$. We have the Equation of $BD$ to $BC$, which call to $r$ and $BC$ $(y)$ will be $e = c - x$, where the Square $e = e - a + c - e + x = x$, whose $c = c + r + x - a + e$. Add, that the a Curve be determined by a Geometrical Description, or by a Sections of a Solid, yet thence an Equation may be obtained, which shall define the Nature of the Curve, and consequently all the Difficulties of Problems proposed about it can be reduced to this Form: For example, if $AB$ be called $x$, and $BC$, $y$, the third Proportional $BF$ will be $Y$, whose Square, together with the Square of $BC$, is equal to $CF$, that is, $y + y = a + a$, or $y^2 + y = a$. And this is an Equation, by which every Point $C$, of the Curve $A K C$, agreeing or corresponding to any Length of the Base (and consequently the Curve it self) is defined; and from whence all Problems can be carried on.

We remain of the Doctrine and Practice of Equations, relating to their Reduction to the lowest and simplest Terms, the better to come at the Value of the unknown Quantity in the Equation, and its Geometrical Conception.

For the Reduction of Equations, see Reduction of Equations.


Equation of Time, in Astronomy, the Difference between mean and apparent Time; or the Reduction of the apparent unequal Time, or Motion of the Sun, to the known True and mean Time or Motion. See Time and Motion.

Time is only measured by Motion; and as Time, in it self, never equably, to measure it, such a Motion might as well be as equal, or which always proceeds at the same Rate.

The Motion of the Sun, is what commonly used for this Purpose; it is the most easy to be observed: Yet it wants the great Qualification of a Chronometer. In Effect, the Astronomers find that the Sun's apparent Motion is No Ways equal; or at least the Seconds to a Line, in the same Place, and afterwards quickens it again. Consequently equal Time cannot be measured thereby. See Sun.

Hence, the Time which the Sun's Motion flows, call'd the apparent Time, becomes different from the true and equable Time, wherein all the Celestial Motions are to be estimated, and accounted.

This Inequality of Time is thus accounted for: The Natural, or Solar Day is measured, not, properly, by one entire Revolution of the Equinoctial, or 24 Equinoctial Hours, but by the Time which passes while the Plane of a Meridian passing thro' the Centre of the Sun, does, by the Earth's Convection round its Axis, return again to the same Plane. The Sun's Centre is, therefore, in 24 to 26 of the next. So that the Day and the next. See Day and Meridian.

Now, had the Earth no other Motion but that round its Axis, all those times would proceed without any other, and the Time of the Revolution of the Equinoctial. But the Earth is otherwise; for while the Earth is turning round its Axis, it is likewise proceeding forward in its Orbit, and making one Revolution round its Axis, yet it arrive at $B$; then, will the Meridian $M D$ be in the Position of $DB$ parallel to the former $MD$; and that Motion has not yet past the Sun's Centre, as will be a figure.

Let the $S$ (Tah. A'Tranon. Fig. 50.) be a Portion of the Eclipse; Let the Line $MD$, represent any Meridian, whose Plane produced, passes thro' the Sun when that Sun is not returning round its Orbit, and in making one Revolution round its Axis, let it arrive at $B$; then, will the Meridian $MD$ be in the Position of $DB$ parallel to the former $MD$; and its Figure at the beginning of the next Day.

Hence it appears, that the Solar Days are all longer than the Time of one Revolution of the Earth round its Axis. However, if the Plane of the Sun be not parallel to the Plane of the Earth's Orbit, and did the Earth proceed with an equal Motion in its Orbit, the Angle $A$ and $B$ would be equal to the Angle $A$ and $B$ in the Time of the Apheion $A$, and in its Middle $B$. The same would be true of the $ACB$, and of the Angle $A$, and of the Time of the Apheion $A$, and in its Middle $B$. The same would be true of the $ACB$, and of the Angle $A$, and of the Time of the Apheion $A$, and in its Middle $B$.

But, as it is, neither of those is the Case: For the Earth does not proceed in its Orbit with an equal Motion, but in its Apheion, declines a little to the left, and in its Middle $B$, fixes the middle $B$. The same would be true of the $ACB$, and of the Angle $A$, and of the Time of the Apheion $A$, and in its Middle $B$.

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Consequently, computing those Motions according to the equal Time, it is necessary to turn that Time back again into apparent Time, that they may correspond to Observation. To do this, suppose the Sun meet the Equinox, the apparent Time thereof must be added to equal Time, to have it correspond with the Times mark'd in the Astronomical Tables.

One doesn't know of any Body in Nature that moves equally; yet such a Motion is alone proper to measure equal Days and Hours; It has been thought fit to imagine some Body, e. gr. a Star, moving in the Equator, Eastwards at a never varying Rate, in the whole Course; but going thro' the Equa tor, in precisely the same Time, as the Sun finishes his Period in the Equinox.

The Motion of such a Star will represent equal Times; and its diurnal Motion in the Equator, will be 90° 8', the same as the mean, or equated Motion of the Sun in the Equinox. Consequently, the mean or equable Day, is determined by the Arrival of this Star at the Meridian, and is equal to the Time, when the whole Course of the Equator, or 360°, passes the Meridian, and 59° 8' more. Which Addition of 59° 8' remaining always the same, these mean or equale Days will be uniformly equal.

Since then the Sun goes unequally Eastwards with respect to the Equator, it will sometimes arrive at the Meridian sooner than this Imaginary Star, and sometimes later. The Difference is the Difference between true and apparent Time; Which Difference is known by having the Place of the Imaginary Star in the Equator; and the Point of the Equator which comes to the Meridian with the Sun. For the Arch intercepted between 'em, being converted into Time, gives the Difference between equal and apparent Time, which, as before, is call'd the Equation of Time.

The Equation of Time then, may be defined the Time that flows while the Arch of the Equator intercepted between the Point determining the right Ascension of the Sun, and the Place of the imaginary Star, passes the Meridian; Or, as Zéело, and, after him, Street, biter it, the Difference between the Sun's true Longitude, and his right Ascension.

EQUATION Solar Days, that is, to convert apparent into mean Time, and mean into apparent Time. 1. If the Sun's right Ascension be equal to his mean Motions, and the Moon and Sun pass the Meridian at the same Time; Consequently, the true coincides with the apparent Time.

3. If the right Ascension be greater than the mean Motion, subtract the latter from the former, and turning the Difference into Solar Time, either subtract it from the apparent Time, to find the mean Time; or add it to the apparent Time, to find the true.

5. Lastly, if the right Ascension be less than the mean Motion, subtract the former from the latter, and turning the Difference into Solar Time, either add it to the apparent Time, to find the mean Time; or subtract it from the mean to find the apparent.

This Method of Equation obtains, if the Calendar be progressive; if it be Retrograde, that is, if the Time be reckoned backward, the Motion must be just the reverse.

This Doctrine of the Inequality and Equation of natural Days, is not only of Use in Astronomical Computations, but also in the adjusting and directing of Clocks, Watches, and other Time Keepers; Hence we say, why a Pendulum, or other Movement, which measures equal Time, does not keep Pace with the Sun, which measures apparent Time, but is sometimes before, and sometimes later than the same. Wherefore, such Automata and Sun Dials, are found almost perpetually at Variance. See Clock and Dial.

The Variations of the two Kinds of Time, are exhibited in the following Table, for every Day throughout the Year. 'Tis borrowed from Mr. Flamsteed; one Part of whose Praeife it is, that he was the first who fully demonstrated and clear'd this inequality of Natural Days: Though other and even Praeif of mine had a partial Notice of it.

The Use of the Table is obvious: A Clock, or Watch, that is, to be kept to true or equal Time, must be so many Minutes and Seconds faster or slower than a Sun Dial, as indicated in the Table, for every respective Day. Or, if you would have it go by the Sun-Dial, it goes well, if it gains or loses each Day the Number of Minutes and Seconds in the Table.

A Table of the Equation of Natural Days, with the Regulation of a Movement by the Sun's Time.

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The Motions of the Sun and Moon, are affected with various Inequalities, whose gives a necessity of so many Equations. See Moon, 5c.

But the greater part of the Moon's Place became exceedingly difficult to be determined, to remove which Difficulty, is the great Design of Sir Isaac Newton's new Theory.
Theory of the Moon, wherein we are furnished with Equations for all the inequalities of the mean motion. 

The principal arc, 

The Annual Equation of the mean Motion of the Sun and Moon, and of the Apogee and Nodes of the Moon. 

The Annual Equation of the mean Motion of the Sun, depends on the eccentricity of the Earth's Orbit round the Sun, which is 16 1/10 of each Part, whereas of the Earth's mean distance from the Sun is 1000; Whence its Denomination of Equation of the Centaur. This, when greatest, is called the Obliquity of the Equator, and the Great Annual Equation of the Moon's mean motion is 11 49'; That of her Apogee 29'; 

And of her Node 3' 50'. 

Which four Annual Equations are always mutually proportional to one another; Wherefore, when any one of them is at the greatest, the other three will also be greatest; and when any one of them, the other three will also be diminutive in the same Ratios.

The Annual Equation of the Sun's Centre being given, the three other corresponding Annual Equations will be also given; and therefore a Table of that will serve for all. For if the Annual Equation of the Sun's Centre be taken from thence, for any Time, and be called P, and let 

\[ P (\text{Taf. Aferoon } \text{Fig. 11}) = Q, \text{ Q} + \frac{1}{2} = R, \]

\[ \frac{3}{2} P = D, D + \frac{3}{2} = E, \text{ and } D - \frac{3}{2} = F, \]

then shall the Annual Equation of the Moon's mean Motion for that Time be R, of that of the Apogee of the Moon will be E, and of the Node F.

Only observe, that if the Equation of the Sun's Centre be not given to be added; then the Equations of the Moon's mean Motion must be substracted, that of her Apogee must be added, and that of the Node substracted. And on the contrary, when the Equation of the Sun's Centre is given, the Equations of the Sun and the Apogee of the Moon may be substracted, the Equations of her Apogee must be added, and that of the Node substracted.

There is also an Equation of the Moon's mean Motion, depending on the Situation of the Earth's Orbit round the Sun, which is greatest, when the Moon's Apogee is in an Equant with the Sun, and is nothing at all, when it is in the Quadratures, or Syzygys. This Equation, when greatest, and the Sun in Perigee, is 5 Min. 16 Seconds. But if the Sun be in Apogee, it will never be above 5 Min. 34 Seconds. At other Distances of the Sun from the Earth's Orbit, this Equation is proportional to the Cube of such Distance. But when the Moon's Apogee is any where but in the Equants, this Equation grows less, and is nothing at all, when the Earth is in the Syzygy of the Sun, and when the Sun, as the Square of the Distance of the Moon's Apogee from the next Quadrature or Syzygy, to the Radius. This is to be added to the Moon's Motion, while her Apogee passes from a Quadrature with the Sun to a Syzygy; but is to be subtracted from it, while the Apogee moves from the Syzygy to the Quadrature.

Equator, or EQUATION of the Moon's Motion, which depends on the Aspects of the Nodes of the Moon's Orbit with the Sun: And this is greatest, when the Nodes are in Equants with the Sun, and vanishes quite away when they come to the next Quadrature of the Moon. This Equation is proportional to the Square of the Distance of the Node from the next Syzygy, or Quadrature of the Sun; and, when the Earth is in the Syzygy of the Sun, is to be added to the Moon's mean Motion, while the Nodes are passing from their Syzygies with the Sun, to their Quadratures with him; but subtracted when they pass from the Quadrature to the Syzygy.

From the Sun's true Place take the equated mean Motion of the Lunar Apogee, as was above showed; the Remainder will be the Argument of the Fid Apogee. From whence the Eccentricity of the Moon, and the Second Equation of her Apogee may be compared.

EQUATOR, or EQUATION, in Astronomy, and Geography, is a movable circle or line, usually distant from the two Poles of the World, or having the same Poles with the Earth. See Circle.

Such is the Circle D A, (Taf. Aferoon Fig. 51) its Poles being P and Q.

It is called the Equator, by Reason when the Sun is therein, the Days and Nights are Equal, whence also it received the Denomination of Equinocials, or Equinoctials, and the Name, and Place where the Sun is on the Equator, the Equinoctial Line, or simply the Line. See EQUINOCIAL.

Every Point of the Equator is a Quadrant's Distance from either Pole of the World; and, whatsoever it is, that the Equator divides the Sphere into two Hemispheres, in one of which is the Northern, and in the other Southern Hemisphere.

By the Poles, or Transits of Arches of the Equator over the Meridian, its equal or mean Time is estimated: Hence we have frequent Occasion for the Construction of the Degrees of the Equator into Parts of Time, and again, for the Re-Conversion of Parts of Time into Parts of the Equator.

For Performance whereof, we subjoin the following Table; wherein are exhibited the Arches of the Equator, which pass the Meridian in the Several Hours, Minutes, Seconds, of Equator, or mean Time. See EQUATION of Time.

<table>
<thead>
<tr>
<th>Equator</th>
<th>Hours</th>
<th>Deg. of Equator</th>
<th>Deg. of Equator</th>
<th>Min. of Equator</th>
</tr>
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<tbody>
<tr>
<td>Min.</td>
<td>I</td>
<td>II</td>
<td>III</td>
<td>IV</td>
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<tr>
<td>III</td>
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<td>Sec.</td>
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<tr>
<td></td>
<td>I</td>
<td>II</td>
<td>III</td>
<td>IV</td>
</tr>
<tr>
<td>Min.</td>
<td>I</td>
<td>II</td>
<td>III</td>
<td>IV</td>
</tr>
</tbody>
</table>

The Use of the Table is obvious, suppose, e. gr. it was required to turn 19° 15' of the Equator into Time; Against 1° Deg. in the first Column, we have 1 Min. 15 Sec. Against 2°, 30 Sec.; Against 3°, 45 Sec.; Against 4°, 1 Mins.; Against 5°, 1 Min. 30 Sec.; Against 6°, 2 Mins. 45 Sec.; Against 7°, 2 Mins. 30 Sec.; Against 8°, 3 Mins. 

Again, suppose it was required to know how many Degrees, Minutes, Seconds, of the Equator, answer to 15 Hours, 25 Min. and 17 Sec. 9′. Against 1′ in the fourth Column, the Table you have 11′ Against 1°, 1′; Against 1°, 5′; Against 2°, 5′; Against 3°, 10 Sec. 9′; Against 2 Sec. 50 Sec.; Against 3 Sec., 3 Mins. 50 Sec.

The Equator, or Altitude of the Equator, is an Arch of a Vertical Circle, intercepted between the Equator and the Horizon. The Equator of the Earth, with that of the Pole, is always equal to a Quadrant. See EQUATION.

EQUATOR, or CURVE, a grand Stable, or Lodge for Horæ, furnished with all the Conveniences thereof; as Stalls, Manger, Rack, &c.

Some hold that Stable, in Propriety, relates only to Bullocks, Cows, Sheep, Hogs, &c. And Equor to Horæ, or the Speeding of the Horse.

A simple Equor is, that provided for one Row of Horæ: A double Equor is that provided for two, with a Full Man in the middle, or two Partners, one of whose being placed Head to Head: As in the little Equor at Veronelli.

Under Equor is sometimes also comprehended the Lodgings, and Apartments, of the Equers, Grooms, Pages, &c.

The Word is form'd from the French Ecurie, which signifies the same Thing. Some, again, derive Ecurie from the Latin Ecuria, which is not only a Place for Beasts to be put up in, but also a Grange, or Barn. But a more probable Derivation is from Eque, a Stable for Horses; whence the English Equor.

EKEY, or EYER, is also Officer, who has the Care and Management of the Horæ of a King, or Prince. Of this Kind is the Evry of the Prince of Wales, who is attended with two Pages, or youths, being placed Head to Head: As in the little Equor at Veronelli.

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Equities are particularly used among us, for Officers of the King's Stables; who when his Majesty goes abroad, ride in the leading Coaches; or in Waging one at a Time monthly, and have a Table with the Gentlemen Utters during the Ride. They used to ride on Horseback by the Coach-Side, when the King travelled; but that being more expensive to them, than necessary to the Sovereign, it has been discontinued. There are Six of them, and their Salary is $224 per Annun each.

The Equities of the Crown Stable have that distinct Appellation, as being employed in managing, and breaking the Young Horses, and preparing them for the King's Riding.

One of them is, or always should be, in close Watch at the Door of the Stable, when all the Coaches, or Horses, which have the Mark of the Horf, or one of the Equities, in his Absence, sits in mounting him; or when his Majesty rides, they usually attend him. They are two, and their Skill and Experience are of another Order. Equus Auratus, is used to signify a Knight Bachelor; call'd Auratus, because anciently none but Knights might ride or beautify their Armour, or other Habiliments of War, with Gold. See Knight.

However, in Law, this Term is not used; but instead of it Miles: and sometimes Chevalier. See Miles, Chevalier.

Equus, or Equestrian, a Term rarely used, but in the Paphian Equestrian Statue, which signifies a Statue representing a Perignon mounted on Horseback. See Statue.

The Fortune Equus, in ancient Rome, was a Statue of that Goddes on Horseback.

We sometimes also say, Equestrian Column. See Column.

And Equestris Order, which signifies, among the Romans, the Order of Knights, or Equites. See Knight.

The Word is formed of the Latin, Equus, Horse, Horseman; of Equus, Horse.

Equiangular, or Equiangular, in Geometry, is applied to Figures whose Angles are all equal. See Angles.

A Square is an Equiangular Figure. See Square.

All equilateral Triangles are also Equiangular. See Equilateral.

Whereas these Three Angles of one Triangle, are severally equal to the three Angles of another Triangle; the Triangles are also said to be Equiangular. See Triangle.

Equiangular, Equilateral, or Equiangular, is a Confinement of the Northern Hemisphere. See Equator.

Equiangular, or Equiangular, Triangle, is what we more usually call an Isosceles. See Isosceles.

Equiangular, or Equiangular, in Architecture, signifies a Class of Squares, or Figures, where the Time Difference between the first and second, as between the second and third, are not to be continually Equiangular. But in a Series of Sex Squares, there will be the same Difference between the first and second, as between the third and fourth, they are said to be differently Equiangular. Thus, 3, 6, 7, and 10, are differently Equiangular; and 3, 5, 6, and 9, continually Equiangular.

Equidistant, or Equidistant, in Geometry, a Term of Relation between two Things, which are every where at an equal, or the same, Distance from each other. See Distance.

Thus parallel Lines are said to be Equidistant, as they neither approach nor recede.

Parallels are Equidistant from each other. See Parallel.

Equilateral, or Equilateral, is applied to any Thing whose Sides are all equal. Thus, an Equilateral Triangle, is the only Triangle that is all equal Length. In an Equilateral Triangle, all the Angles are likewise equal. See Triangle.

There are Equilateral Figures, and regular Bodies, are Equilateral. See Polygon.

An Equilateral Hyperbola, is that wherein the conjugate Axes, as A and B, and D and E, are equal. (Tab. Couci's Fig. 1.)

Hence, as the Parameter is a 3. Of Proportion to the conjugate Axes, so is also its Theorem. Consequentially, in the Equation $y = b + a x$, make $b = 2 a$, and the Hyperbola, is the Nature of an Equilateral Hyperbola. See Hyperbola.

Equilibrium, or Equilibrium, in Mechanics, a Term implying an exact Equilibrium of Weight between two Bodies, compared with each other. See Weight.

Thus, we say a Balance is in Equilibrium, when the two Ends are so exactly poind, that neither of them affords or defends, but both retain their parallel Position to the Horizon. From which Circumstance the Word is originally taken, as being a Composing of equi, and Balance.

When the Temperature of the Air is very high, the Sect. of Balance, The Equilibrium of Fluids makes a considerate Part of the Universal Hydraulick. See Fluids.

The Terms Equilibrium, or Equilibrium, of vol. i. 242.

Thus, e.g., if one Arm be moving forward, the other must be proportionably backward to poise the Figure. Thus, in a Picture, there should be an Equilibrium between one Part and another, so as to be distributed, as to balance, and contrast each other; and not too many, e.g., be crowded on one Side, and the other left bare. Peace is never well secured, unless the Enemy's Strength are thus proportionably distributed. See Multiplication.

Equimultiplic, in Arithmetic and Geometry, is applied to simple Magnitudes, when multiplied equally, i.e., by equal Quantities, or Multiplicies. See Multiplication.

Thus, taking A as many Times as B, or multiplying them equally, there will still remain the same Ratio between the magnified, as between the primitive Magnitudes before Magnified.

Now, those Magnitudes, thus equally multiplied, are called Equimultiplic of the original ones A and B: Wherefore, we say, A and B have the same Ratio as the simple Quantities. See Ratio.

In Arithmetic, we generally use the Term Equimultiplic for Numbers which contain equally, or an equal Number of Units. See Number.

Thus 12 and 6 are Equimultiplic of their Submultiplic 4 and 3; insomuch as each of them contains its Submultiplic three Times. See Submultiplic.

Equinoctial, or Equinoctial, in Astronomy, a great and immovable Circle of the Sphere, under which the Equator moves in its diurnal Motion. See Sphere.

The Equinoctial, or Equinoctial Line, is ordinarily considered a great Circle, or that the Plane of the Equator being moveable, and the Equinoctial immovable; and the Equator drawn about the Convex Surface of the Sphere, but the Equinoctial on the Concave Surface of the Sphere. See Convex and Concave Surface.

The Equinoctial is conceived, by supposing a Semi-diameter of the Sphere, produced thro' a Point of the Equator, and there, by the Rotation of the Sphere about its Axis, describing a Circle on the immovable Surface of the principal Mobile.

Whenever the Sun, in its Progresse thro' the Ecliptic, comes to the colline Point of the Equator, the Days are equal all round the Globe, as then arising due East, and setting due West, which he never does at any other Time of the Year. See Day.

And the Day and Night, from equus, and not, Night; quia aequus aequalis. See Night and Day.

The Equinoctial, then, is the Circle which the Sun describes, or appears to describe, at the Time of the Equinox; that is, when the Length of the Day is equal to that of the Night; which happens twice per Annum. See Equinox.

Equinocial, in Geography. See Equator.

Equestrian, Equine, Horseman, Geography. People who live under this Circle, by Geographers and Navigators call'd the Time, have their Days and Nights constantly equal. And at Noon, the Sun is in their Zenith, and in their Midst. See Horseman.

This from this Circle, is the Dedication, or Latitude of Places, accounted in Degrees of the Meridian. See Latitude.

Equestrian Point, is the Point where the Equator and Ecliptic interect each other. The one, being in the first Point of Aries; call'd the Verit; and the other in the first Point of Libra, call'd the Autumnal Point. See Equinoctial Point, and Equinoctial.

Equestrian Points, is that putting thro' the Equinoctial Points. See Colored.

Equestrian Day, is that whole Time lies parallel to the Equestrian Point. See Colored.

Equinox, or Equinox, in Astronomy, the Time when the Sun enters one of the Equinoctial Points. That when he enters the Parall of the Sign, is particularly described in the Astronomical Calendar, but the other is call'd the Autumnal Point. See Equinoctial Points.

The Equinox happen when the Sun is in the Equinoctial Circle; when Confluence, the Days are equal to the Nights throughout the World, which is the Circle