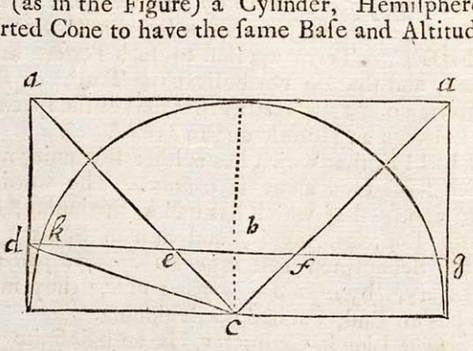
D A- Every thing that promotes Salvation is advantageous:
R I- There are Afflictions which promote Salvation;
I. Therefore there are Afflictions which are advantageous.
D A- Every thing that promotes Salvation is advantageous:
B I- There are Afflictions which promote Salvation;
T I S. Therefore ſome things promoting Salvation are Afflictions, or afflicting.

INDIVIDUAL, or INDIVIDUUM, in Logic, is a particular Being of any Species, or that which can't be divided into two or more Beings, equal or alike. The uſual Diviſion in Logic is made into Genera, or Genus's, thoſe Genera into Species, and thoſe Species into *Individuals*. The Schoolmen make a fourfold Diſtinction of *Individuals*: (1.) *Individuum Vagum*, is that, which tho' it ſignifies but one thing, yet may be any of that kind; as when we ſay a Man, a certain Perſon, or one ſaid ſo and ſo, tho' but one Perſon is meant, yet that Perſon, for ought that appears to the contrary, may be any body. (2.) *Individuum Determinatum*, is when the thing is named and determined; as *Alexander*, the River *Nile*, &c. this is alſo called *Signatum*. (3.) *Individuum Demonſtrativum*, is when ſome demonſtrative Pronoun is uſed in the Expreſſion; as this Man, that Woman. (4.) *Individuum ex Hypotheſi*, or by Suppoſition, when an univerſal Name or Term is reſtrained, by the Suppoſition, to a particular thing; as when we ſay, the Son of ſuch an one, and it be known that he had but one Son.

INDIVISIBLES, in Geometry, are underſtood of ſuch Elements or Principles, as any Body or Figure may ultimately be reſolved into; and theſe Elements, or *Indiviſibles*, are, in each peculiar Figure, ſuppoſed to be infinitely ſmall. With regard to which Notion, a Line may be ſaid to conſiſt of Points, a Surface of parallel Lines, and a Solid of parallel and ſimilar Surfaces; and then becauſe each of theſe Elements is ſuppoſed indiviſible, if in any Figure, a Line be drawn thro' the Elements perpendicularly, the Number of Points in that Line will be the ſame, as the Number of the Elements. Whence we may ſee, that a Parallelogram, Priſm, or Cylinder, is reſolvable into Elements or *Indiviſibles*, all equal to each other, parallel, and like to the Baſe: A Triangle into Lines parallel to the Baſe, but decreaſing in Arithmetical Proportion; and ſo are the Circles, which conſtitute the Parabolic Conoid, and thoſe which conſtitute the Plane of a Circle, or the Surface of an Iſoceles Cone. A Cylinder may be reſolved into Cylindrical Curve Surfaces, having all the ſame Height, and continually decreaſing inwards, as the Circles of the Baſe do, on which they inſiſt. This Method of *Indiviſibles* is only the antient Method of Exhauſtion, a little diſguiſed and contracted, and is now allowed to be of excellent Uſe in the ſhortning of Mathematical Demonſtrations. Of which take the following Inſtance in that famous Propoſition of *Archimedes*, That a Sphere is two Thirds of a Cylinder circumſcribing it. For ſuppoſe (as in the Figure) a Cylinder, Hemiſphere, and an inverted Cone to have the ſame Baſe and Altitude, and



to be cut by infinite Planes, all parallel to the Baſe, of which *d g* is one; it is plain, the Square of *d h* will every where be equal to the Square of *k c* (the Radius of the Sphere) the Square *h c* = *e h* ſquare; and conſequently ſince Circles are to one another as the Squares of the Radii, all the Circles of the Hemiſphere will be equal to all thoſe of the Cylinder, deducting thence all thoſe of the Cone: wherefore the Cylinder, deducting the Cone, is equal to the Hemiſphere; but it is known, that the Cone is one Third of the Cylinder, and conſequently the Sphere muſt be two Thirds of it.

INDORSEMENT is any thing written on the Back of a Deed or Inſtrument; as a Condition, written on the back of an Obligation, is commonly called an *Indorſement*, from *in* and *Dorſum*, *Back*.

INDUCTION, *in Logic*, a Conſequence drawn in reaſoning from ſeveral eſtabliſhed Principles. Thus the Concluſion of a Syllogiſm is an *Induction* made from the Premiſes. An *Induction*, however, may be juſtly ſaid to be a Syllogiſm of itſelf, being a kind of Medium between an Enthymeme and a Gradation, in regard it wants a Propoſition (which, however, is underſtood) as in the Enthymeme, and abounds in Aſſumptions (which yet are collateral, or of the ſame degree) which is the Caſe in a Gradation. Thus, for inſtance, every Terreſtrial Animal lives, every Aerial Animal alſo lives, every Aquatic Animal lives, and every Reptile Animal lives; therefore every Animal lives. There are, it may be obſerved, various Aſſumptions, from the more general Species of the Animal Kind collected into one, which this Propoſition is ſuppoſed to precede, *viz.* every Animal is either Terreſtrial, Aerial, Aquatic, or Reptile.

Suidas reckons three kinds of *Induction*; that juſt mentioned, which concludes or gathers ſome general Propoſition from an Enumeration of all the Particulars of a kind, he calls the *Dialectic Induction*. The ſecond, which proceeds by Interrogation, and concludes probably, or with a Veriſimilitude, by the *Greeks* called ἐπαγωγὴ, and was that which *Socrates* ordinarily made uſe of, as *Cicero* in his Topics, and *Quintilian* have obſerved. The third kind of *Induction* is properly rhetorical; being a Concluſion drawn from ſome Example or Authority. This is a very imperfect *Induction*, all its Force lying in a Propoſition which is concealed, and which will hardly bear being expreſſed. Thus he that ſays, *Codrus* died bravely for his Country, therefore I muſt die bravely for my Country, proves nothing, unleſs this Propoſition be carried in mind, that I muſt do the ſame with *Codrus*. Again, *Archimedes*, and the other Mathematicians ſay, the Sun is much bigger than the Earth; therefore it muſt be owned the Sun is much bigger than the Earth. Where the Propoſition is underſtood, *viz.* whatever *Archimedes* and the other Mathematicians ſay is true.

INDUCTION, in the *Engliſh* Cuſtoms, is uſually taken for the giving Poſſeſſion to an Incumbent of his Church, by leading him into it, and delivering him the Keys by the Commiſſary or Biſhop's Deputy, and by his ringing one of the Bells. When a Clerk is inſtituted into a Benefice, he is to exhibite his Mandate from the Biſhop to the Arch-Deacon, or other Perſon to whom it is directed, and hath a Right thereby to be inducted into his Living; and if he be refuſed *Induction*, he hath a Remedy both in the Eccleſiaſtical Court, and alſo an Action of the Caſe in the Common Law, againſt the Arch-Deacon. If the Inductor, or Perſon to be inducted, be kept out of the Church or Houſe by Laymen, the Writ *de vi Laica* lies for the Clerk, which is directed out of the Chancery to the Sheriff of the County, to remove the Force, &c. If another Clergyman, preſented by the ſame Patron, keep poſſeſſion, a Spoliation is grantable out of the ſpiritual Court, whereby the Tithes, &c. ſhall be ſequeſtred, till the Right be determined. The Arch-Deacon rarely inducts a Clerk by himſelf in Perſon, but iſſues out a Warrant to all Clerks and Lettered Perſons within the Arch-Deaconry, impowering any of them to do it in his ſtead. The uſual Form and Manner of *Induction*, is, for the Inductor to take the Clerk by the Hand, and then to lay it on the Key of the Church, which muſt be then in the Door, and to ſay, 'By virtue of this Inſtrument, I induct 'you into the real, actual, and corporal Poſſeſſion of the 'Rectory or Vicarage of ------, with all its Fruits, Profits, 'Members, and Appurtenances.' This done, he opens the Door, and puts the Clerk in poſſeſſion of the Church, and ſhuts the Door upon him; who after he hath tolled a Bell (if there be any) comes out, and deſires the Inductor to indorſe a Certificate of his *Induction* on the Arch-Deacon's Warrant, and that all preſent will ſignify it under their Hands. If the Church-Key cannot be had, it is ſufficient that the Clerk lays hold of the Ring of the Door, and within the time limited read the Common-Prayer, and Thirty-nine Articles of the Church in the Church-Porch. Within two Months after this, the Clerk muſt read the Thirty-nine Articles, and all the Service of the Day, both at Morning and Evening-Prayers, and declare his Aſſent and Conſent; he muſt alſo then read the Biſhop's *Engliſh* Certificate, in which is the Declaration of his Conformity; and of all this he muſt have two or three good Witneſſes, who muſt ſign that they heard him do it, and be ready to atteſt it, *viva voce*, if required; and within three Months after *Induction*, he muſt alſo take the Abjuration-Oath at the Quarter-Seſſions, or in ſome one of the Courts at *Weſtminſter-Hall*. The word *Induction* is derived from the *Latin in*, and *duco*, *to lead*.

INDULGENCE, *in the* Romiſh *Theology*, is the Remiſſion of the Puniſhment due to a Sin, granted by the Church, and ſuppoſed to ſave the Sinner from Purgatory. They found their *Indulgences* on the infinite Treaſure of the Merits of Jeſus Chriſt, the Holy Virgin, and all the Saints, which they ſuppoſe the Church has a right of diſtributing, by virtue of the Communion of Saints. The *Roman* Jubilee carries with it a plenary or full *Indulgence* for all the Crimes committed therein. The Pope alſo grants Bulls of plenary *Indulgence* to ſeveral Churches,

Monaſteries, and even to private Perſons; and 'tis a frequent thing to have general *Indulgences* for the time of the principal Feaſts of a Year. Their Caſuiſts ſay, that a plenary *Indulgence* does not always prove effectual, for want of complying with the Conditions whereon it was granted.

Indulgence, *Indult*, or *Indulto*, ſignifies alſo a ſpecial Favour or Privilege, conferred either on a Community, or a particular Perſon, by the Pope's Bulls, in virtue whereof he is licenſed to do or obtain ſomething contrary to the Intention and Diſpoſition of the common Laws. There are two kinds of *Indulto's*; the one active, which conſiſts in a Power of nominating and preſenting freely, and without reſerve, to Benefices that are otherwiſe limited and reſtrained by the Laws of the Apoſtolical Chancery; ſuch are thoſe ordinarily granted to Secular Princes, Cardinals, Biſhops, *&c.* Paſſive *Indulto's* conſiſt in a power of receiving Benefices and expectative Graces; of which kind are thoſe of a Parliament, of Graduates, and Mandatories. The *Indulto* of Kings is the Power given them of preſenting to Conſiſtorial Benefices, either by Treaty, by Favour, or ſpecial Privilege. The *Indulto* of Cardinals is a Licence for holding Regular as well as Secular Benefices, in diſpoſing of them *in commendam*, or continuing them, *&c.* *Indulto* of Parliament is a Right or Privilege granted to the Chancellor, Preſidents, Counſellors, and other Officers in the Parliaments, to obtain a Benefice of the Collator, upon the King's Nomination directed to him. This is a kind of Advowſon or Patronage belonging to the *French* King, the *Indulto* being a Mandate or Grace, by which he is permitted to name to any Collator he pleaſes, a Counſellor, or other Officer of Parliament, on whom the Collator ſhall be obliged to beſtow a Benefice: ſo that the Right of the *Indulto* reſides radically in the King, the Officers being only the Objects thereof. See *Diſpenſation*.

INDURATING, a Term applied to ſuch Things as give a harder or firmer Conſiſtence to others, by a greater Solidity of their Particles, or as diſſipate the thinner Parts of any Matter, ſo as to leave the Remainder harder. Thus a Tumour is indurated, either by the Addition of earthy and ſolid Particles, as in *Schirri* and knotty Swellings, or by tranſpiring the thinner Parts thro' the Skin, whereby the Remainder grows more fixed, as in an *Oedema*.

INEQUALITY of Natural Days. See *Equation*.

INERTIÆ VIS. See *Vis Inertiæ*.

INESCATION, a kind of Tranſplantation, practis'd for the Cure of certain Diſeaſes; it conſiſts in impregnating a proper Medium or Vehicle, with ſome of the Mumia or vital Spirit of the Patient, and giving it to ſome Animal to eat. 'Tis pretended the Animal unites and aſſimilates that Mumia with itſelf, correcting it, and imbibing its vicious Quality, and by that means reſtoring Health to the Perſon whereto the Mumia belonged. If the Animal happens to die before the Cure be effected, a ſecond Animal muſt be pitched on, and the Experiment repeated. Some tell us, that the Blood of the Patient well putrefied or fermented, does the Buſineſs better than any other Part. The word is derived from the privative Prepoſition *in*, and *eſca*, *Food*.

INESCUTCHEON, *in Heraldry*, ſignifies all the *Eſcutcheons* containing ⅓ of the Field, and is borne within it, as an Ordinary. Thus, 'tis ſaid, he beareth Ermin, an *Ineſcutcheon* Gules. This is alſo ſometimes called an *Ineſcutcheon of Pretence*, which is borne when a Man marries an Heireſs; for then he bears her Coat of Arms on an *Ineſcutcheon*, or *Eſcutcheon of Pretence*, in the middle of his own Coat.

IN ESSE, Authors make this Difference between a thing *in eſſe*, and a thing *in poſſe*; a thing that is not, but may be, they ſay is *in poſſe*, or *potentia*; but a thing apparent and viſible, they ſay is *in eſſe*, that is, has a real Being *eo inſtanti*, whereas the other is caſual, and at beſt but a Poſſibility.

INFALLIBLE, that which cannot deceive, or be deceived. Upon this Term ſtands one of the principal Heads of Controverſy between the Reformed and the Catholicks. The latter of whom maintain, that the Church, aſſembled in General Council, is *infallible*, which the former deny. The principal Reaſons they give for the *Infallibility*, are drawn from the Obſcurity of the Scriptures, the Inſufficiency of private Judgment, and the Neceſſity there is of ſome *infallible* Judge for the Deciſion of Controverſy. The *Infallibility* of the Pope is a Doctrine of a late ſtanding, and not entirely acquieſced in even in their own Communion. *Du Pin*, a Doctor of the *Sorbonne*, has written againſt it, and the late Behaviour of the Cardinal *de Noailles*, and the proteſting Biſhops, ſeconded by a conſiderable Part of the Clergy of *France*, ſhew to how low an Ebb the Pope's *Infallibility* is reduced in that Country. The word comes from the *Latin* Prepoſition *in*, taken privatively, and *fallo*, *I deceive*.

INFAMOUS, in the ordinary Uſe of the Word, ſignifies ſomething notoriouſly contrary to Virtue or Honour. *Aulus Gellius* uſes the words *Infames Materias*, for what we ordinarily call *Paradoxes*, i. e. Diſcourſes remote from the common Opinion; Propoſitions that appear oppoſite to Truth, *&c.* as the Elogy of *Therſites*; the Praiſe of a Quartan Ague, *&c.*

Infamous, in Law, is ſomething void of Honour, that has no Repute or Eſteem in the World. There are two kinds of *Infamy*; ſome being *infamous* by Right, *de Jure*, as thoſe who have been noted by the Laws, or ſtigmatized by publick Judgments: Others are *infamous* in Fact, *de Facto*, as thoſe who exerciſe ſome ſcandalous Profeſſion, as a Catchpole, a Merry Andrew, a Hangman, an Informer, *&c.* Heretofore there were Crowns of *Infamy* given by way of Puniſhment to Criminals: they were made of Wooll. The word *infamous* is derived from the *Latin*, *in*, and *Fama*, *Fame*, *Report*.

INFANT, any Man or Woman under the Age of one and twenty Years is an *Infant* in Law. An *Infant* eight Years of Age, or upwards, may commit Homicide, and be hanged for it, if it appear by any other Act that he had Knowledge of Good and Evil; for here *Malitia ſupplebit Ætatem*; yet *Coke* on *Littleton*, *Sect.* 405. ſays, *An Infant ſhall not be puniſhed till the Age of Fourteen*; which, according to him, is the Age of Diſcretion.

INFANTE, INFANTA, a Title of Honour given to the Children of ſome Princes, particularly to thoſe of the Houſe of *Spain* and *Portugal*. It is uſually ſaid that this Title was introduced into *Spain*, on occaſion of the Marriage of *Eleanor* of *England* with King *Ferdinand* of *Caſtile*, and that their Son *Sancho* was the firſt that bore it. But this is contradicted by *Pelagius* Biſhop of *Oviedo*, who lived in the Year 1100, and informs us, that the Titles *Infante* and *Infanta*, were uſed in *Spain* ever ſince the Reign of King *Evremond* II.

INFANTRY, Troops, or Forces, conſiſting of Foot-Soldiers.

INFATUATE, to prepoſſeſs any one in favour of a Perſon or Thing that does not deſerve it, ſo far as that he can't eaſily be diſabuſed. The *Romans* called thoſe infatuated Perſons *Infatuati*, who fancied they had ſeen Viſions, or imagined the God *Faunus*, whom they called *Fatuus*, had appeared to them. The word *infatuate* comes from the *Latin Fatuus*, *Fool*, of *fari*, *to ſpeak out*, which is borrowed from the *Greek* φάομαι, whence φάτις, which ſignifies the ſame with *Vates* in *Latin*, or *Prophet* in *Engliſh*; and the reaſon is, becauſe their Prophets or Prieſts uſed to be ſeized with a kind of Madneſs or Folly, when they began to make their Predictions, or deliver Oracles.

INFECTION, is the catching a Diſeaſe by ſome Effluvia or fine Particles, which fly off from ſome diſtempered Bodies, and mixing with the Juices of others, occaſion the ſame Diſorders, as in the Bodies they came from. The word comes from the *Latin* Verb *inficere*, which properly ſignifies *to dye of ſome other Colour*; *inficere*, *i.e. facere ut aliquid intus ſit*, *to occaſion ſomething to be imbibed*. See *Poiſon*.

INFIDEL, a Term applied to ſuch Perſons as are not baptized, and that do not believe the Truths of the Chriſtian Religion. 'Tis Baptiſm that makes the ſpecific Difference between an Heretic and an *Infidel*.

INFINITE, that which has neither Beginning nor End; in which ſenſe God alone is *infinite*. The word is alſo uſed to ſignify that which has had a Beginning, but will have no End, as Angels, and human Souls. This is what the Schoolmen call *infinitum à parte poſt*; as, on the contrary, by *infinitum à parte ante*, they mean that which has an End, but had no Beginning.

An *infinite* Line in Geometry, is an indefinite or indeterminate Line, to which no certain Bounds or Limits are preſcribed.

Infinite Quantity. See *Quantity Infinite*.

Infinite Series. See *Series*.

INFINITELY INFINITE FRACTIONS, a Term uſed where all the Fractions, whoſe Numerator is 1, are together equal to an Unit: and hence it is deduced, that there are not only *infinite* Progreſſions, or Progreſſions *in infinitum*; but alſo *infinitely* farther than one kind of Infinity. That theſe *infinitely* infinite Progreſſions are notwithſtanding computable, and to be brought into one Sum; and that not only finite, but into one ſo ſmall, as to be leſs than any aſſignable Number: That of Infinite Quantities, ſome are equal, others unequal; that one infinite Quantity may be equal to two, three, or more Quantities, whether infinite or finite.

INFINITIVE, in Grammar, is the Name of one of the Modes ſerving for the conjugating of Verbs. It does not denote any preciſe time, nor does it determine the Number or Perſons, but expreſſes things in a looſe indefinite Senſe, as *to teach*, *&c.* In moſt Languages, both antient and modern, the *Infinitive* is diſtinguiſhed by a Termina-

Termination peculiar to it, as πιστεύειν in the *Greek*, *ſcribere* in the *Latin*, *ecrire* in the *French*, *ſcrivere* in the *Italian*, &c. but the *Engliſh* is defective in this point; ſo that to denote the *Infinitive*, we are always obliged to have recourſe to the Article *to*, excepting ſometimes when two or more *Infinitives* follow each other. The Practice of uſing a Number of *Infinitives* ſucceſſively, is a great, but a common Fault in Language, as *he offers to go to teach to write* Engliſh. Indeed, where theſe *Infinitives* have no dependence on each other, they may be uſed elegantly enough; as *to mourn, to ſigh, to ſink, to ſwoon, to die.*

INFINITY. The Idea ſignified by the name *Infinity* is beſt examined, by conſidering to what *Infinity* is by the Mind attributed, and then how it frames it. Finite and Infinite are looked upon as the Modes of Quantity, and attributed primarily to things that have Parts, and are capable of Increaſe or Diminution, by the Addition or Subſtraction of any the leaſt Part. Such are the Ideas of Space, Duration, and Number. When we apply this Idea to the Supreme Being, we do it primarily in reſpect of his Duration and Ubiquity; more figuratively, when to his Wiſdom, Power, Goodneſs, and other Attributes, which are properly inexhauſtible and incomprehenſible: For when we call them infinite, we have no other Idea of this Infinity, but what carries with it ſome Reflection on the Number or the Extent of the Acts or Objects of God's Power and Wiſdom, which can never be ſuppoſed ſo great, or ſo many, that theſe Attributes will not always ſurmount and exceed, tho we multiply them in our Thoughts with the *Infinity* of endleſs Number. We do not pretend to ſay, how theſe Attributes are in God, who is infinitely beyond the reach of our narrow Capacities; but this is our way of conceiving them, and theſe our Ideas of their *Infinity*. We come by the Idea of *Infinity* thus. Every one that has any Idea of any ſtated Lengths of Space, as a Foot, Yard, &c. finds that he can repeat that Idea, and join it to another, to a third, and ſo on, without ever coming to an end of his Additions. From this Power of enlarging his Idea of Space, he takes the Idea of infinite Space, or Immenſity. By the ſame Power of repeating the Idea of any Length or Duration we have in our Minds, with all the endleſs Addition of Number, we come by the Idea of Eternity. If our Idea of Infinity be got, by repeating without end our own Ideas, why do we not attribute it to other Ideas, as well as thoſe of Space and Duration; ſince they may be as eaſily and as often repeated in our Minds as the other? yet no body ever thinks of infinite Sweetneſs, or Whiteneſs, tho he can repeat the Idea of Sweet or White, as frequently as thoſe of Yard or Day? To this it is anſwer'd, that thoſe Ideas which have Parts, and are capable of Increaſe by the Addition of any Parts, afford us by their Repetition an Idea of *Infinity*; becauſe with the endleſs Repetition there is continued an Enlargement, of which there is no end: but it is not ſo in other Ideas; for if to the perfecteſt Idea I have of White, I add another of equal Whiteneſs, it enlarges not my Idea at all. Thoſe Ideas, that conſiſt not of Parts, cannot be augmented to what proportion Men pleaſe, or be ſtretch'd beyond what they have received by their Senſes; but Space, Duration, and Number being capable of Increaſe by Repetition, leave in the Mind an Idea of an endleſs room for more; and ſo thoſe Ideas alone lead the Mind towards the Thought of *Infinity*. We are carefully to diſtinguiſh between the Idea of the *Infinity* of Space, and the Idea of a Space infinite. The firſt is nothing but a ſuppoſed endleſs Progreſſion of the Mind over any repeated Idea of Space: But to have actually in the Mind the Idea of a Space infinite, is to ſuppoſe the Mind already paſſed over all thoſe repeated Ideas of Space, which an endleſs Repetition can never totally repreſent to it; which carries in it a plain Contradiction. This will be plainer, if we conſider *Infinity* in Numbers. The *Infinity* of Numbers, to the End of whoſe Addition every one perceives there is no Approach, eaſily appears to any one that reflects on it: But how clear ſoever this Idea of the *Infinity* of Numbers be, there is nothing yet more evident, than the Abſurdity of the actual Idea of an infinite Number.

INFIRMARY, a Place where the Sick belonging to any Society or Community are diſpoſed.

INFLAMMATION, in Phyſic, is underſtood of a Tumour, occaſioned from an Obſtruction; by means whereof the Blood flowing into ſome Part faſter than it can run off again, ſwells up, and cauſes a Tenſion, with an unuſual Soreneſs, Redneſs, and Heat. The immediate Cauſe, therefore of all *Inflammations*, is an overflowing of Blood. Other Cauſes, more remote, may be the Denſity and Coagulation of the Blood, or the Relaxation and Contuſion of the Fibres. Phyſicians have given particular Names to the *Inflammations* of ſeveral Parts. That of the Eyes is call'd *Ophthalmia*, that of the Lungs *Peripneumonia*, and that of the Liver *Hepatites*. The word *Inflammation* comes from the *Latin in*, and *Flamma*, Flame.

INFLATION, a blowing up; is the ſtretching or filling any flaccid or diſtendable Body, with a flatulent or windy Subſtance. From the *Latin in* and *flatus*, of *flo*, I blow.

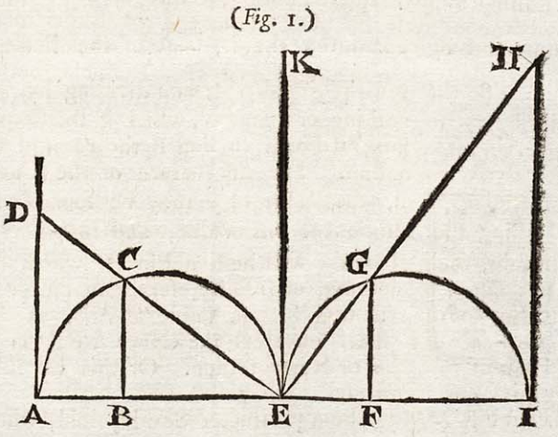
INFLECTION, in Optics, is a multiplicate Refraction of the Rays of Light, cauſed by the unequal Denſity of any Medium, whereby the Motion or Progreſs of the Ray is hindred from going on in a right Line, and is inflected or deflected by a Curve, ſaith Dr. *Hook*, who firſt took notice of this Property: And this, he ſaith, differs both from Reflection and Refraction, which are both made at the Superficies of the Body, but this in the middle of it within. Sir *Iſaac Newton*, as you will find under *Light*, diſcover'd alſo by plain Experiment this *Inflection* of the Rays of Light; and M. *de la Hire* ſaith, he found, That the Beams of the Stars being obſerved in a deep Valley, to paſs near the Brow of a Hill, are always more refracted, than if there were no ſuch Hill, or the Obſervations were made on the top thereof; as if the Rays of Light were bent down into a Curve by paſſing near the Surface of the Mountain. Sir *Iſaac Newton* in his Optics makes ſeveral Experiments and Obſervations on the *Inflection* of the Rays of Light; which ſee under *Light* and *Rays*.

INFLECTION, in Grammar, is the Variation of Nouns and Verbs, in their ſeveral Caſes, Tenſes, and Declenſions. *Inflection* is a general Name, under which are comprehended both the Conjugation and Declenſion.

INFLECTION POINT of any Curve, in Geometry, ſignifies the Point or Place where the Curve begins to bend back again a contrary way: As for inſtance, when a curve Line, as A F K, is partly concave, and partly convex towards any right Line, as A B, or towards a fixed Point, then the Point F, which divides the concave from the convex Part, and conſequently is at the Beginning of the one, and End of the other, is called the *Point of Inflection*, as long as the Curve, being continued in F, keeps its Courſe the ſame; but it is called the Point of Retrogreſſion, when it inflects back again towards that Part or Side, from whence it took its Original. See *Fig.* 2.

Before the Theory of this *Inflection*, and Retrogreſſion of Curves, can be underſtood, it may be neceſſary to explain this general Principle. Whatſoever finite Quantity (or if it be a Fluxion, it is all one) goes on continually increaſing or decreaſing, it cannot change from a poſitive to a negative Expreſſion, or from a negative to a poſitive one, without firſt becoming equal to an infinite or nothing. It is equal to nothing, if it doth continually decreaſe, and equal to an infinite, if it doth continually increaſe. To illuſtrate this, let there be two Circles touching one another in the Point E (*Fig.* 1.) their Diameters A E and E I lying in one and the ſame right Line. Let A E or E I be $= d$. Let the Diſtance between the Extremity A and any Ordinate in either of the Circles be $=$ to x perpe-

(*Fig.* 1.)

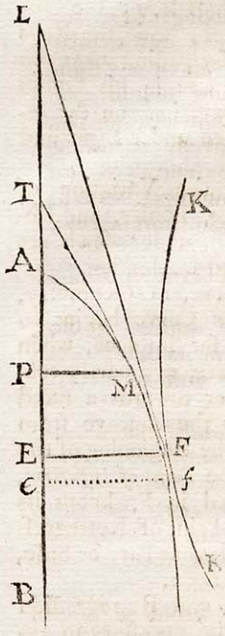


tually. I conſider now, what will be the Expreſſions of the Lines intercepted between E the Point of Contact of the Circles; ſuch as are the Lines E B and E F intercepted between E and the Ordinates C B and G F. It is certain therefore, that taking a Point, as B, any where between A and E, that then the Expreſſion of the intercepted B E is $d - x$; but taking a Point, as F between E and I, the Expreſſion of the intercepted E F, ſhall be $x - d$. For A B, or A F, being taken for x indifferently, the Values of the intercepted Lines will appear with this Change of Signs. In one caſe therefore the Expreſſion is poſitive, in the other negative. But as the Points B or F approach to E, the Quantities B E and E F decreaſe continually, and at the Point E are equal to nothing. So that it is plain there is no paſſing from a poſitive to a negative Expreſſion, in this caſe, of a Quantity continually decreaſing, without paſſing thro nothing. For the other part, let us conſider the Tangents (as D A or H I) cut off by Lines continually drawn from E, the Point of the Circle's Contact. If C B, or G F, be put equal to y, the

Expreſſion

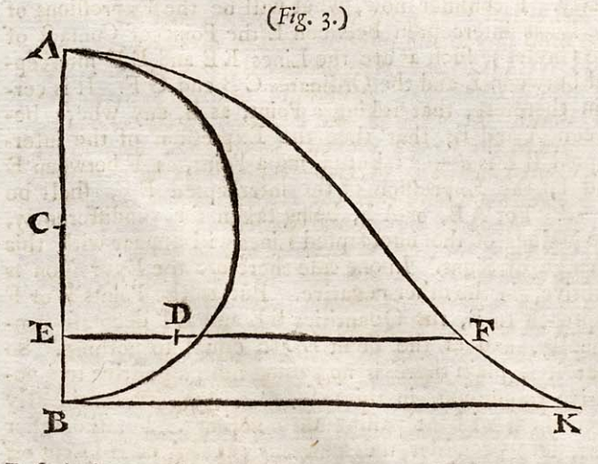
Expreſſion of any ſuch Tangent will be $\frac{y\,d}{d-x}$, or $\frac{y\,d}{x-d}$, according as we take it on the one or the other ſide of the Point E; in one caſe therefore it is poſitive, in the other negative. But as the Points B or F approach to E, the Tangents D A and H I increaſe continually, and at the Point E they become infinite. Therefore a Quantity that continually increaſeth, cannot paſs from a poſitive to a negative Expreſſion, without being infinite. All this is univerſally true, whether it be a finite Quantity or a Fluxion that we conſider. There is no changing from poſitive to negative, without paſſing thro nothing or infinite. Applying this therefore to a Fluxion, it will follow from hence, That the Fluxion of a Quantity that expreſſeth a *Maximum* or a *Minimum*, muſt be equal to nothing, or to infinite. And upon this Foundation, we may now eaſily proceed to the Points of *Inflection* and Retrogreſſion. In order to find a general Theorem to aſſiſt us in this Matter, let us conſider the Curve A F K, (*Fig.* 2.) whoſe Diameter is the right Line A B; and its Ordinates P M, *e f*, parallel to one another. If through the Point F be drawn the Ordinate Applicate E F, together with the Tangent F L; and from any other Point, as M on the ſame ſide with A F, be drawn the Ordinate Applicate M P, as likewiſe the Tangent M T: It is evident, (1.) In theſe Curves that have a Point of *Inflection*, that the *Abſciſſa* A P increaſes continually, and that the Part A T of the Diameter, intercepted between A the Origin of the Axis, and T the Concourſe of the Tangent and the Axis, increaſeth ſuch time as the Point P fall upon E, and after it again begins to diminiſh: From whence it is apparent, that A T muſt become the *Maximum* A L, when the Point P falls upon the Point E required. (2.) In thoſe Curves that have a Point of Retrogreſſion, it is evident that the Part A T increaſeth continually, and that the *Abſciſſa* increaſeth ſo long, till the Point T fall upon L, after which it again diminiſheth: From whence it is clear, that A P muſt become a *Maximum*, when the Point T falls upon L. Now if A E be put $=x$, E F $=y$, then will A L be $=\frac{y\dot{x}-x\dot{y}}{\dot{y}}$, whoſe Fluxion, which is $\frac{y^2\dot{x}-y\dot{x}\ddot{y}-x\dot{y}\ddot{y}}{y^2}$ (ſuppoſing $\dot{x}$ invariable) being divided by $\dot{x}$; the Fluxion of A E muſt become nothing or infinite; that is, $\frac{-y\ddot{y}}{y^2}$ = nothing or infinite: So that multiplying by y^2, and dividing by $-y$, $\ddot{y}$ will be = to nothing or infinite; which in the Sequel will ſerve for a general Form to find F the Point of *Inflection* or Retrogreſſion. For the nature of the Curve A F K being given, the Value of $\dot{y}$ may be found in $\dot{x}$; and taking the Fluxion of this Value, and ſuppoſing $\dot{x}$ invariable, the Value of $\ddot{y}$ will be found in x^2, which being put equal to nothing, or Infinity, ſerves in either of theſe Suppoſitions to find ſuch a Value of A E, as that the Ordinate E F ſhall interſect the Curve A F K in F, the Point of *Inflection* or Retrogreſſion. Of this we ſhall only give one Example.

(*Fig.* 2.)



Let A F K (*Fig.* 3.) be a protracted Semicycloid, whoſe

(*Fig.* 3.)



Baſe is longer than the Circumference of the generating Circle A D B, whoſe Center is C. It is required to find E in the Diameter A B; ſo that the Ordinate Applicate E F ſhall cut the Semi-cycloid in F, the Point of contrary Flexion. Suppoſe the known Quantities A D B $=a$, B K $=b$; A B $=2c$, and the unknown Quantities A E $=x$, E D $=z$, the Ark A D $=u$, E F $=y$; then by the Property of the Cycloid $y=z+\frac{b\,u}{a}$, and therefore $\dot{y}=\dot{z}+\frac{b\,\dot{u}}{a}$: But by the Property of the Circle $z=\sqrt{2cx-xx}$, conſequently $\dot{z}=\frac{c\dot{x}-x\dot{x}}{\sqrt{2cx-xx}}$, and $\dot{u}\,(\sqrt{\dot{x}^2+\dot{z}^2})=\frac{c\dot{x}}{\sqrt{2cx-xx}}$: Therefore ſubſtituting for $\dot{z}$, and $\dot{u}$ their reſpective Values, we have $\dot{y}=\frac{ac\dot{x}-ax\dot{x}+bc\dot{x}}{a\sqrt{acx-xx}}$, and the Fluxion thereof, (ſuppoſing $\dot{x}$ invariable) is $\frac{bcx-acx-bcc\times x}{2cx-xx\times\sqrt{2cx-xx}}=0$, that is, A E $(x)=c+\frac{ac}{b}$ and C E $=\frac{ac}{b}$. Hence it is evident, That to have F a Point of contrary Fluxion, b muſt be greater than a; for if it be leſs, then C E would exceed C B. Concerning the *Inflection* of the Rays of Light, ſee *Light*.

INFLUENCE, a Quality ſuppoſed to flow from the Bodies of the Stars, or the Effect of their Heat and Light, to which the Aſtrologers vainly attribute all the Events that happen on the Earth. The Alchymiſts, who make it the Philoſopher's Stone, tell us, that every thing in Nature is produced by the *Influence* of the Stars, which, in their Paſſage thro' the Atmoſphere, imbibe many of its moiſt Parts, the groſſeſt whereof they depoſite in the Sands and Earths where they fall; that theſe filtrating thro' the Pores of the Earth, deſcend even to the Center, whence they are driven, by the central Fire, back again to the Surface, and in their Aſcent, by a natural kind of Sublimation, as they find Earths well diſpoſed, they form natural Bodies, as Metals, Minerals, and Vegetables, *&c.* Thus Chymiſtry conſiſting in an artificial Imitation of theſe natural Operations, and in applying active Principles to paſſive Principles, 'tis pretended it can form natural Bodies, make Gold, *&c.*

INFLUENT, a Term uſed where any Liquor or Juice, by the Contrivance of Nature, and the Laws of Circulation, falls into another Current and Receptacle. Thus with reſpect to the common Receptacle in the human Body, the Chyle is its *influent* Juice, and ſo is the Bile to the Gall-Bladder, and Venal-Blood to the Heart in its Diaſtole; and the like.

IN FORMA PAUPERIS, in Law, is when any Man that hath a juſt Cauſe or Suit, either in the Chancery, or any of the Courts of Common Law, will come before the Lord-Chancellor, or Maſter of the Rolls, or either of the Chief Juſtices, or Chief Baron, and make Oath, that he is not worth five Pounds, his Debts paid; either of the ſaid Judges will, in his own proper Court, admit him to ſue *in Forma Pauperis*, and he ſhall have Counſel, Clerk, or Attorney aſſigned to do his Buſineſs, without paying any Fees.

INFORMATION, in Law; ſee *Inditement*. *Information* for the King is the ſame; that for a common Perſon we call Declaration, and is not always done directly by the King, or his Attorney, but ſometimes by another, who ſues as well for the King as himſelf; on a Breach of ſome Penal Law or Statute, wherein a Penalty is given to the Party that will ſue for the ſame.

INFORMATUS NON SUM, or *Non ſum Informatus*; a formal Anſwer made of courſe by an Attorney, who is commanded by the Court to ſay any thing he thinks good in behalf of his Client; who having nothing material to ſay, makes anſwer he is not inform'd: on which, Judgment paſſes for the other Party.

INFORMIS, *informed*, that which has not the Form or Perfection it ſhould have. In Aſtronomy we uſe the Terms *Stellæ Informes*, for ſuch Stars as have not yet been reduced into any Conſtellation. Of which kind there was a great Number left by the antient Aſtronomers, tho' *Hevelius*, and ſome others of the Moderns, have provided for the greateſt part of them, by making new Conſtellations.

INFRACTION, a Rupture or Violation of a Treaty, a Law, Ordinance, *&c.* from the Prepoſition *in*, and the Supine of *frango*, *to break*.

INFRA-LAPSARII, the Name of a Sect, who maintain, that God has created a certain Number of Men only to be damned, without allowing them the means neceſſary to ſave themſelves, if they would. This Doctrine they maintain in different manners, the Sect itſelf being divided into two Branches. Some of them hold, that

that God independently of every thing, and antecedently to all Knowledge or Foreſight of the Fall of the firſt Man, reſolved to ſignalize both his Mercy and his Juſtice; his Mercy, by creating a certain Number of Men, to make them happy to all Eternity; and his Juſtice, by creating likewiſe a Number of other Men, to be miſerable to all Eternity. Others hold, that God did not take this Reſolution, but in conſequence of Original Sin, and of the Knowledge which he had from all Eternity, that *Adam* would commit it: for, ſay they, Man, by this Sin, having forfeited all Pretences to his original Juſtice, deſerves nothing now but Puniſhment. All Mankind is become a Maſs of Corruption, which God may abandon to eternal Deſtruction, without any Impeachment of his Juſtice. However, to ſhew his Mercy too, as well as his Juſtice, he has reſolved to ſelect ſome out of this Maſs, to ſanctify them, and to make them happy. Thoſe who maintain the Doctrine in the firſt manner, are called *Supra-lapſarii*, as believing that God formed the Reſolution of damning a Number of Men, *ſupra Lapſum*, before *Adam*'s Fall, and independently of it. Thoſe of the ſecond Opinion, are called *Infra-lapſarii*, as holding that God made that Reſolution, *infra Lapſum*, after his Knowledge of the Fall, and in conſequence thereof.

INFRA-SPINATUS, a Muſcle that ariſes from the inferior Parts of the Baſis, Spine, and Under-Coſta of the Scapula, and filling the lower Interſcapulum, paſſes on between the Spine and Teres Minor in a triangular Form, and growing tendinous at the Cone, is inſerted into the Head of the Humerus, and draws directly backwards.

INFULA, a Name antiently given to ſome of the Pontifical Ornaments. *Feſtus* tells us, that the *Infulæ* were Filaments or Fringes of Wooll, wherewith the Antients uſed to adorn their Prieſts, their Victims, and even their Temples. Several Authors confound the *Infula* with the Mitre, Tiara, or Cap wore by the Prieſts; but there was a great deal of Difference. The *Infula* was properly a Fillet or Headband of white Wooll, covering that Part of the Head where the Hair grows, as far as the Temples, whence, on each Side, hung down two Strings, called *Vittæ*, to bind it withal; and this has given occaſion to ſome Authors to confound the *Infulæ* with *Vittæ*. The *Infula* was the ſame thing to Prieſts that the Diadem was to Kings, *viz.* the Badge of their Dignity and Authority. The Difference between the Diadem and the *Infula* conſiſted in this, that the Diadem was flat and broad, and the *Infula* rounded and twiſted.

INFUNDIBULUM, a *Latin* Word, ſignifying a Funnel; whence many Parts in an human Body, having a Reſemblance thereto in Shape, are thus called; as the *Infundibulum Cerebri*, and *Infundibulum Renum*; for which ſee *Brain and Kidneys*: and ſome Parts of Plants, for the ſame reaſon, are called *Infundibuliformes*. See *Flowers*.

INFUSION is a Part of Pharmacy, whereby the Virtues of Plants, Roots, and the like, are drawn out, by letting them ſteep in ſome convenient Menſtruum. *Infuſion* is uſed in Bodies of a lax Texture, whoſe Parts are ſo light, as not to admit of a greater Motion, without hazard of flying away in Vapour. Its Uſe is to communicate the Virtues out of Bodies to Liquors, either in order to augment their Force, or correct their ill Qualities. Some *Infuſions* are made in common Water, others in Wine, Vinegar, Milk, Spirit of Wine, &c.

Infuſion is alſo uſed to ſignify the Action of conveying a Liquor into the Body by the Veins. Some Phyſicians have found out a new Method of Purging, by infuſing a Cathartic into the Veins, which operates pretty much after the manner of a Clyſter.

INGEMINATED FLOWERS, are when one Flower ſtands on, or naturally grows out of another.

INGENIT, inborn, ſignifies any Diſeaſe, or Habit, that comes into the World with a Perſon, and is nearly the ſame with Hereditary.

INGENUOUS, among the *Romans*, was a Title applicable to a Perſon who was born free, or of free Parents. A Perſon was accounted *ingenuous* if only the Mother were free, and the Father a Servant. Theſe could give their Votes, and enjoy Offices, from which the *Liberti*, or Freed Men, &c. were debarred. *Iſidore* ſays, they are called *Ingenui qui Libertatem habent in Genere, non in Facto*, who are born free, not thoſe who acquire their Freedom.

Ingenuous is ſometimes alſo uſed to ſignify the Native of a Country, in contradiction to a Foreigner.

INGLUVIES, or Crop, a part which in granivorous Fowls ſerves for the immediate Reception of the Food, where it remains ſome time for Maceration, before it be tranſmitted to the Stomach. This *Ingluvies* is furniſhed with Glands, which, the Patrons of Fermentation maintain, convey a Menſtruum thither, that impregnates the Aliment, and ſerves inſtead of Maſtication.

INGOT is a little Wedge or Maſs of Gold and Silver, or an uncertain Quantity of Bullion.

INGREDIENTS are all the Simples which go into the Compoſition of any Medicine, Ointment, Sauce, &c.

INGRESS, in Aſtronomy, ſignifies the Sun's entering the firſt Scruple of one of the four Cardinal Signs, eſpecially *Aries*.

INGRESSU, in Law, a Writ of Entry, whereby a Perſon ſeeks Entry into Lands or Tenements. It lies in various Caſes, and has various Forms.

INGROSSATOR MAGNI ROTULI, is the ſame as Clerk of the Pipe, which ſee.

INGROSSER, in Common Law, is one that buys Corn growing, or any Proviſions, before the Market, to ſell again; it alſo ſignifies a Clerk, who writes Records or Inſtruments of Law in Skins of Parchment.

INGUEN is that Part of the Body, reaching from the Head of the Thigh to above the ſecret Parts, and is commonly called the Groin. *Inguinalis* is given to any Subdiviſions made of that Part, or any thing therein contained, or applied thereunto by way of Medicine, or the like. The word is pure *Latin*, and is derived, according to ſome, from *Unguen*, *Ointment*, becauſe theſe Parts are frequently anointed. Others derive it from *ango*, becauſe Pains happen frequently there; others again from *ingenor*, becauſe the genital Parts are here.

INHARMONICAL RELATION is a Term in Muſic. See *Relation inharmonical*.

INHERENCE, a Term in Philoſophy, applied to the Juncture or Connexion of an Accident with its Subſtance. Thus Quantity has a neceſſary *Inherence* with a natural Body.

INHERITANCE is a Perpetuity in Lands and Tenements to a Man and his Heirs: This word *Inheritance* is not only underſtood where a Man hath *Inheritance* of Lands and Tenements by Deſcent or Heritage, but alſo every Fee-Simple and Fee-Tail, that a Man hath by his Purchaſe, may be ſaid to be by *Inheritance*, for that his Heirs may inherit after him.

INHIBITION is a Writ to inhibit or forbid a Judge from farther proceeding in the Cauſe depending before him; ſometimes *Prohibition* and *Inhibition* are put together: but *Inhibition* is moſt commonly a Writ iſſuing out of a higher Court to a lower and inferior; and *Prohibition* out of the King's Court to an inferior Court.

INJECTION, in Pharmacy, is any liquid Medicine made to be injected by a Syringe, Clyſter-Pipe, or any other Inſtrument into any Part of the Body. It is likewiſe a common Term for filling the Veſſels with coloured Wax, or any other proper Matter, to ſhew their Figures and Ramifications; a thing frequent among Anatomiſts.

INITIALIA, a Name antiently given to the Myſteries of *Ceres*. See *Cerealia*.

INITIATED, a Term properly uſed in ſpeaking of the Religion of the antient Heathens, where it ſignifies to be admitted to a Participation of the Myſteries of Religion; tho' the word is alſo ſometimes uſed in ſpeaking of other Religions, and even of Philoſophy and other Sciences. The Antients never diſcovered the deeper Myſteries of their Religion, nor even permitted ſome of their Temples to be open to any but thoſe who had been *initiated* in certain Orders. The word comes from the *Latin initiatus*, of *initiare*, *initiari*. *Initiari* properly ſignifies to begin ſacrificing, or to receive or admit a Perſon to the beginning of Myſteries, or of Ceremonies of leſs importance. *Caſaubon*, upon *Athenæus*, obſerves, that all the Myſteries were not communicated at once to the Perſons who preſented themſelves for the Prieſthood, but that at firſt they purified them, then admitted them to the leſs conſiderable Matters to diſpoſe them for the more important, and at laſt they drew the Veil quite, and laid open all the moſt ſacred and ſolemn Parts of Religion.

INJUNCTION is a Writ grounded upon an interlocutory Order in Chancery, ſometimes to give poſſeſſion to the Plaintiff, for want of the Defendant's Appearance; ſometimes to the King's ordinary Court, and ſometimes to the Court-Chriſtian, to ſtop Proceedings in a Cauſe, upon Suggeſtion made, that the Rigour of the Law, if it take place, is againſt Equity and Conſcience in that Caſe.

INJURY, in the general meaning of the word, ſignifies any thing contrary to Juſtice and Equity. The Civilians define *Injury* a private Offence, committed deſignedly, and with an evil Intention, to any Man's Prejudice. The Author of the Rhetorics to *Herennius* ſays, *Injuria eſt quæ aut Pulſatione, aut Convicio, aut Turpitudine, Corpus, Aures, aut Vitam alicujus violavit.* Action on an *Injury* is annual, that is, no Reparation could be required after the Expiration of a Year. By the Law of the twelve Tables, where the *Injury* was the breaking of a Limb, the injured Perſon might demand *Talionem*, that is, he might break the

ſame Limb of the Criminal. For the breaking of a Bone there were conſiderable pecuniary Puniſhments aſſigned: For other *Injuries* only twenty *Aſſes* were decreed, which the Poverty of thoſe times thought a ſufficient Penalty; but the Prætors afterwards finding this too ſlender a Satisfaction, in lieu thereof appointed the injured Perſon to ſet a Rate on the *Injury*, which they afterwards increaſed or leſſened as they thought good. The word is derived from the *Latin* Prepoſition *in*, which here has a negative Power, and *Jus*, *Law*, *Right*; *Injuria dicitur omne quod non Jure fit.* The Antients made a Goddeſs of *Injury*, and called her *Ate*. *Homer* makes her the Daughter of *Jupiter*, and ſays, ſhe did miſchief to every body, even to her Father; that ſhe was very nimble and tender-footed, and walked altogether on Mens Heads, without ever touching the Ground.

INK, the common Writing-Ink is a Compoſition of Vitriol, Galls, Gum and Water. Printing-Ink is made of Nut-Oil or Linſeed-Oil, Turpentine, and a kind of Black.

Indian, or *Chineſe Ink*, is an admirable Compoſition, and has been in vain attempted to be imitated in *Europe*. It is not fluid like our Writing-Inks, but ſolid, like our Mineral Colours, tho much lighter. They make it of all Figures, but the moſt uſual is rectangular about a quarter of an Inch thick. Some of them are gilt with Figures of Dragons, Birds, Flowers, *&c.* In order to this, they have little wooden Molds, ſo curiouſly wrought, that we could hardly equal them in Metals. Before you uſe this *Ink*, there muſt be a little hollow Marble, or other Stone, with Water in it, on which the Stick of *Ink* muſt be ground, till the Water becomes of a ſufficient Blackneſs. It makes a very black ſhining *Ink*, and tho' it be apt to ſink when the Paper is thin, yet it never runs or ſpreads; ſo that the Letters are always ſmooth and evenly terminated, how big ſoever they be. It is of great Uſe in deſigning, becauſe it may be weakened or diminiſhed to any degree one pleaſes; and there are abundance of things which can't be repreſented to the Life without it. The *Chineſe* make it with Smoak-Black of different kinds, but the beſt is made of the Smoak of fat Pork, burnt at a Lamp. They mix a kind of Oil with it, to make it more ſmooth, and add other odorous Ingredients to take away the Rankneſs of the Smell. After they have mixed it into a Paſte of a proper Conſiſtence, they put it into a Mold to figure it.

INLAND, implies any thing ſituated in the main Land, or Heart of a Country far from the Sea-Coaſts. Hence *Inland* Bills in Traffic are ſuch Bills as are payable in the ſame Land wherein they are drawn.

INMATES, are ſuch Perſons as are admitted (for their Money) to live in the ſame Houſe with another Man, tho in different Rooms, and which go in at the ſame Door jointly with others to whom the Houſe belongeth, and which are not able to maintain themſelves. Theſe are inquirable in a Court-Leet.

INNATE HEAT. See *Calidum Innatum.*

INNATE IDEAS, or Principles, are certain primary Notes or Characters, ſuppoſed to be ſtamped on the Mind of Man when it firſt receives its Being, and which it brings into the World with it; but the Doctrine of *Innate Ideas* is abundantly confuted by Mr. *Locke*. See *Idea*.

INNINGS; Lands recovered from the Sea, by draining and banking, are ſo called.

INNOCENTS-DAY, the Name of a Feaſt celebrated in Commemoration of the Infants murdered by *Herod.* heretofore it was the Cuſtom to have Dances in the Churches on this Day, wherein were Perſons who repreſented Biſhops, by way of Deriſion of the Epiſcopal Dignity. This appears by a Canon of the Council of *Cognac*, held in 1260, which expreſly forbids it.

INNOMINATI, *Gli Innominati*, *Anonymi*, Perſons who have no Names; a Title by which the Academiſts of *Parma* diſtinguiſh themſelves. Moſt Cities in *Italy* have an Academy, and each has its proper Name; thus thoſe at *Parma* entitle themſelves *Gli Innominati*, as if it was their Name to have no Name at all.

INNOMINATUM, in general, ſignifies any thing without a Name. Many Parts of the Body are left under this indiſtinct Term, as the *Innominata Glandula Oculi*, now called *Caruncula Oculi*. See *Eye*. *Innominata Tunica Oculi*. See *Eye*. *Innominatum Os*. See *Ilium*.

INNS. Our Colleges of Municipal or Common Law, Profeſſors, and Students, are ſtill called *Inns*; the old *Engliſh* word for Houſes of Noblemen, Biſhops, and others of extraordinary Note, which is of the ſame Signification with the *French* word *Hôtel*.

Inns of Court, are ſo called, as ſome think, becauſe the Students there are to ſerve the Courts of Judicature, or elſe becauſe antiently theſe Colleges received none but the Sons of Noblemen and better ſort of Gentlemen, as *Forteſcue* affirms. Of theſe we have four; *viz.* the two *Temples*, heretofore the Dwelling of the Knights-Templers, purchaſed by ſome Profeſſors of the Common Law about 300 Years ago; and *Lincolns-Inn* and *Grays-Inn*, antiently belonging to the Earls of *Lincoln* and *Gray*. Theſe Societies are no Corporations, nor have any Judicial Power over their Members, but have certain Orders among themſelves, which have, by Conſent, the force of Laws: for lighter Offences they are only excommoned, or put out of Commons; for greater, they loſe their Chambers, and are expelled the College; and when once expelled out of one Society, they are never received by any of the others. The whole Company of Gentlemen in each Society may be divided into four Parts, Benchers, Utter-Barriſters, Inner-Barriſters, and Students. See *Bencher* and *Barriſter*.

Inns of Chancery were probably ſo called, becauſe antiently inhabited by ſuch Clerks as chiefly ſtudied the forming of Writs, which regularly belonged to the Curſitors, who are Officers of Chancery. The firſt of theſe is *Thavies-Inn*, begun in the Reign of *Edward* III. and ſince purchas'd by the Society of *Lincolns-Inn*; then *New-Inn*, *Clements-Inn*; *Cliffords-Inn*, antiently the Houſe of the Lord *Clifford*; *Staple-Inn*, belonging to the Merchants of the Staple; *Lyons-Inn*, antiently a common Inn with the Sign of the Lion; *Furnivals-Inn*, and *Bernards-Inn*.

Theſe were heretofore preparatory Colleges for younger Students, and many were entered here before they were admitted into the *Inns* of Court. Now they are moſtly taken up by the Attorneys, Sollicitors, *&c.* They belong all to ſome of the *Inns* of Court, who ſend yearly ſome of their Barriſters to read to them.

INNUENDO, from *innuo*, *to beck or nod with the Head*, is a word frequently uſed in Writs, Declarations, and Pleadings. The Uſe of it is only to declare and aſcertain the Perſon or Thing which was named, or left doubtful before; as he (*innuendo*, the Plaintiff) is a Thief, mention being before made of another Perſon.

INOCULATION, in Agriculture, is a kind of Grafting, or an artificial Operation, by which the Bud of one Fruit-Tree is ſet into the Stock or Branch of another, ſo as to make different ſorts of Fruit grow on the ſame Tree. There are various ways of performing this. The antient Method was by making a ſhallow Inciſion in the Bark, where the Knot of a Shoot or Oculus (whence the Operation takes its Name) begins to bud forth, into which a promiſing Shoot of another kind was inſerted, and the Inciſion cloſed up with fat Earth or Clay. The Method of *Inoculation*, now in the beſt Repute, is as follows: They cut off a vigorous Shoot from the Tree that is to be propagated, a Month before or after *Midſummer*; then chuſe out a ſmooth Place in the Stock (which ſhould not be of above three or four Years Growth) making a perpendicular Slit in the Bark a little above an Inch long, and another at right Angles to it, at the lower end, to give way to the opening of the Bark. This done, the Bark is gently looſened from the Wood on both Sides with a Penknife, beginning at the bottom; they then prepare the Bud, cutting it off from the aforeſaid vigorous Shoot, and taking with it as much of the Wood above as below it, and as near as may be to the Length of the ſlit in the Stock. When the Bud is thus cut off, they take out the woody part of the Bud, and put the Bud itſelf in, between the Bark and the Wood of the Stock, at the Croſs-ſlit before opened, leading it upwards by the Stalk, where the Leaf grew, till it exactly cloſes. They then bind it about with Woollen Yarn, the better to make all Parts of it cloſe exactly, that the Bud may imbody itſelf with the Stock, which it will do in three Weeks time. This Operation is ſaid to be beſt performed in a cloudy Day, or in an Evening; and 'tis obſerved, that the quicker 'tis done, the better it ſucceeds. This Practice has the advantage of Engrafting in a great many reſpects, both as it is more ſecure, it ſeldom failing of having effect, eſpecially if two or three Buds are put into the ſame Stock, and as its Succeſs is more readily diſcovered. Indeed when large Stocks are to be practiſed on, *Inoculation* is not proper, and they are obliged to have recourſe to Grafting. This one Rule is obſerved to hold univerſally, *viz.* that no Succeſs is to be expected in *Inoculation*, if the Sap does not run well, that is, if the Bark won't part readily from the Wood of the Stock.

In a Phyſical Senſe, *Inoculation* is uſed for the Tranſplantation of Diſtempers from one Subject to another, particularly for the Ingraftment of the Small-Pox, which is a new Practice among us, but of antient Original in the *Eaſtern* Countries. The beſt Method of performing the Operation is as follows: After the Body is rightly diſpoſed and prepared, by proper Diet and Evacuations, two ſmall Inciſions are made, one in the muſcular part of the Arm, about the Place where an Iſſue is uſually cut, and the other in the Leg of the oppoſite Side; then being provided of a ſmall Quantity, as a Drop or leſs of well-concocted *variolous Matter*, choſe from the diſtinct or beſt ſort of Puſtules, before the Turn of the Diſtemper, and imbibed

imbibed by two ſmall Doſſils of Lint; theſe are immediately put into the Inciſions, whilſt the *Matter* remains warm, and are kept on by a proper Bandage. In a day or two the Bandages are opened, the Lint thrown away, and only Colewort-Leaf applied over the Inciſions. This Dreſſing is continued daily. The Inciſions uſually grow ſore, inflame and inlarge of themſelves, and diſcharge Matter more plentifully as the Diſtemper riſes. The Eruptions generally appear within eight or ten days after the Operation, during which time the Patient is not confined, or obliged to obſerve a very ſtrict Regimen. The Practice ſeems to be uſeful, becauſe the moſt proper Age, the moſt favourable Seaſon of the Year, moſt regular Method of Preparation, and all poſſible Precautions may here be uſed, according to the Wiſhes of the Patient, his Parents, and Phyſician; Advantages impoſſible to be had when the Diſtemper is caught in the natural way. It has alſo been conſtantly obſerved, that the beſt ſort of Small-Pox is hereby occaſioned, that the Eruptions are few, the Symptoms light, the Danger next to none, the Recovery eaſy, and that the Patient is equally ſecured from this Diſtemper for the future, as he would be by having gone thro' it in the natural manner.

INORDINATE PROPORTION is thus: Suppoſing three Magnitudes in one Rank, and three other proportional to them in another, you compare them in a different Order; as if there are in one Rank theſe three Numbers, 2, 3, 9; and in another Rank theſe other three, 8, 24, 36, proportional to the precedent, in a different Order, ſo that 2 ſhall be to 3 as 24 to 36, and 3 to 9 as 8 to 24. Then caſting away the mean Terms in each Rank, conclude the firſt 2 in the firſt Rank is to the laſt 9, as 8, the firſt of the other Rank, to the laſt 36.

INOSCULATION. See *Anaſtomaſis* and *Artery*.

IN PACE, a *Latin* Term, in uſe among the Monks, to ſignify a Priſon, where ſuch of them are ſhut up as have committed any grievous Fault. Formerly there us'd to be a world of Ceremony at the putting a Religious *in pace*, but now 'tis not much regarded. Such as are ſhut up in perpetual Impriſonment, are alſo ſaid to be *in pace*. Sometimes alſo the words *requieſcat in pace* are uſed by way of Alluſion to a Cuſtom in the *Romiſh* Church, of praying that the Souls of the Defunct may reſt in Peace. Thoſe words are alſo frequently ſeen at the bottom of Epitaphs, in lieu of thoſe uſed by the antient *Romans*, S.T.T.L. *i. e. Sit tibi Terræ levis*, Light lie the Earth; *& ſit humus Cineri non oneroſa tuo.*

IN PROMPTU, a *Latin* word uſed among the *French*, tho' but rarely in the *Engliſh*. It ſignifies a Piece made off-hand, extemporary, without any previous Meditation, by the mere Vivacity of Imagination. Many Authors pique themſelves on their *in promptu's*, which yet were done at leiſure, and in cold blood.

INQUIRENDO, is an Authority given to a Perſon, or Perſons, to enquire into ſomething for the King's advantage.

INQUISITION, or the Holy Office, an Eccleſiaſtical Juriſdiction eſtabliſhed in *Spain*, *Portugal*, and *Italy*, for the Trial and Examination of ſuch Perſons as are ſuſpected to entertain any religious Opinions contrary to thoſe profeſſed in the Church of *Rome*. It is called *Inquiſition*, becauſe the Judges of this Office take cognizance of Crimes on common Report, without any legal Evidence. Some People fancy they ſee the Original of the *Inquiſition* in a Conſtitution made by Pope *Lucius*, at the Council of *Verona*, in 1184. in regard he there orders the Biſhops to get Information, either by themſelves, or by their Commiſſaries, of all ſuch Perſons as were ſuſpected of Hereſy; and diſtinguiſhes the ſeveral Degrees, of Suſpected, Convicted, Penitent, and Relapſed, *&c.* However, 'tis generally allowed, that it was Pope *Innocent* III. who laid the firſt Foundations of the Holy Office, and the *Vaudois* and *Albigenſes* were what gave the occaſion to it. He ſent ſeveral Prieſts, with St. *Dominic* at their head, to *Tholouſe*, in order to blow up a Spirit of Zeal and Perſecution amongſt the Prelates and Princes. Theſe Miſſionaries were to give an account to the Pope of the Number of Heretics in thoſe Parts, and of the Behaviour of the Princes and Perſons in Authority, and thence they acquired the Name of *Inquiſitors*; but theſe original Inquiſitors had not any Court, or any Authority, they were only a kind of Spiritual Spies, who were to make Report of their Diſcoveries to the Pope. The Emperor *Frederic* II. at the beginning of the 13th Century, extended their Power very conſiderably, and committed the taking cognizance of the Crime of Hereſy to a Set of Eccleſiaſtical Judges; and as Fire was the Puniſhment decreed for the Obſtinate, the Inquiſitors determined indirectly with regard both to the Perſons and to the Crimes: by which means the Laity was cut off from its own Juriſdiction, and abandoned to the Zeal and devout Madneſs of the Eccleſiaſtics. After the Death of *Frederic*, who had long ago repented the Power he had given the Churchmen, as having ſeen ſome of the Fruits of it; Pope *Innocent* IV. erected a perpetual Tribunal of Inquiſitors, and deprived the Biſhops and Secular Judges of the little Power the Emperor *Frederic* had left them. And this Juriſdiction, which depended immediately on himſelf, he took care to introduce into moſt of the States in *Europe*. But the Inquiſitors were ſo fiery hot, and made ſuch horrible Butchery among the reputed Heretics, that they raiſed an univerſal Deteſtation, even in ſome Catholic Countries, themſelves. Hence it was that their Reign proved very ſhort both in *France* and *Germany*, nor was even *Spain* entirely ſubject to them till the time of *Ferdinand* and *Iſabella* in 1448, when their Power was increaſed, under pretence of clearing the Country of *Judaiſm* and *Mahometaniſm*.

The Power of the *Inquiſition* is very much limited in ſome Countries, particularly at *Venice*, where it is received under ſuch Modifications, as prove a great Check on its Authority. Indeed at *Venice* it ſeems rather a political than a religious Contrivance, and ſerves rather for the Security of the State than of the Church. There are Appeals from the Subaltern *Inquiſitions* in *Italy*, to the Congregation of the Holy Office reſiding at *Rome*. 'Tis the conſtant Practice of the *Inquiſition*, to affect, in all their Procedures, to inſpire as much Terror and Amazement as poſſible; every thing is done with the profoundeſt Silence and Secrecy, and with the greateſt Rigour and Impartiality. When a Perſon is ſeized, all the World abandons him, not the neareſt Friend dares ſpeak a Word in his Defence; that alone would be enough to render them ſuſpected of Hereſy, and would bring them within the Claws of the *Inquiſition*. The Criminals are ſeized, examined, tried, tortured, and, unleſs they recant, condemned and executed, without ever ſeeing or knowing their Accuſers; whence the Revengeful have a fair occaſion of wreaking their Malice on their Enemies. When the *Inquiſition* has done with them, and condemned them to death, they are turned over to the Secular Arm, with a world of Prayer and pious Intreaty, that their Lives may not be touched. Time is no manner of Security in points of Hereſy, nor does the Grave itſelf ſhelter the Accuſed from the Purſuits of the *Inquiſition*; even the Deceaſed have their Trials, and they proceed in all their Form and Solemnity againſt dead Carcaſes. The Executions are always deferred till the Number of the Condemned is very great, that the Multitude of Sufferers may ſtrike the deeper Horror, and make the Scene more terrible and ſhocking.

The *Inquiſition* of *Rome* is a Congregation of twelve Cardinals, and ſome other Officers, where the Pope preſides in Perſon. This is accounted the higheſt Tribunal in *Rome*; it began in the time of Pope *Paul* IV. on occaſion of the ſpreading of *Lutheraniſm*.

The *Inquiſition* is very ſevere in the *Indies*. 'Tis true, there muſt be the Oaths of ſeven Witneſſes to condemn a Man; but then the Depoſitions of Slaves or Children are taken. The Perſon is tortured till he condemns himſelf, for his Accuſers are never brought to confront him. Perſons are accuſed for the ſlendereſt Expreſſion againſt the Church, or even for a diſreſpectful Word of the *Inquiſition*. The Standard of the *Inquiſition* is a red Damask, on which is painted a Croſs, with an Olive-Branch on one ſide, and a Sword on the other, with thoſe words of the Pſalm, *Exurge, Domine, & judica Cauſam meam.*

INQUISITION, in Law, is a manner of proceeding in Matters criminal by the Office of the Judge, or by the great Inqueſt before Juſtices in Eyre. Inquiſitors among us are Sheriffs, Coroners *ſuper viſum Corporis*, or the like, who have Authority to enquire into certain Caſes.

INROLMENT, in Law, is the Regiſtring, Recording, or Entring of any lawful Act in the Records of Chancery; as a Recognizance acknowledg'd, or a Statute, or a Fine levied: or in the Rolls of the Exchequer, King's-Bench, or Common-Pleas, or in the Huſtings at *Guild-Hall*, *London*, or by the Clerk of the Peace in any County.

INSCONCED, is a Term in the Military Art, implying that a Part of an Army have fortified themſelves with a Sconce or ſmall Fort, in order to defend ſome Paſs, *&c.* See *Sconces*.

INSCRIBED, in Geometry: A Figure is ſaid to be inſcribed in another, when all the Angles of the Figure inſcribed touch either the Angles, Sides, or Planes of the other Figure.

Inſcribed Hyperbola, is ſuch an one, as lies intirely within the Angle of its Aſſymptotes, as the Conical Hyperbola doth.

INSCRIPTION, a Title affixed to any thing, to give ſome particular Knowledge thereof. Antiquaries are very curious, in examining antient *Inſcriptions* found on Stones, and other Monuments of Antiquity. *Sanchoniatho*, Cotemporary, as 'tis ſaid, with *Gideon*, drew moſt of the Memoirs, whereof

whereof his Hiſtory is compoſed, from *Inſcriptions*, which he found in Temples and on Columns, both among the Heathens and the *Hebrews*. It appears indeed that the Antients ingraved upon Pillars the Principles of Sciences, as well as the Hiſtory of the World. Thoſe mentioned by *Herodotus* ſhew, that this was the firſt way of inſtructing People, and tranſmitting Hiſtories and Sciences to Poſterity. This is confirmed by *Plato*, in his *Hyparchus*, wherein he ſays, that *Piſiſtratus* engraved, on Stone-Pillars, Precepts uſeful for Husbandmen. *Pliny* aſſures us, that the firſt publick Monuments were made with Plates of Lead; and the Treaties of Confederacy, made between the *Romans* and the *Jews*, were written upon Plates of Braſs; that, ſays he, the *Jews* might have ſomething to put them in mind of the Peace and Confederacy concluded with the *Romans*. The *Greeks* and *Romans* were great Dealers in *Inſcriptions*, and were extremely fond of being mentioned in them; and hence it is that we find ſo many, in thoſe Countries of antient Learning, as that large Volumes have been compoſed of them; as the Collection of *Gruterus*, &c. Since *Gruter*'s Collection, *Th. Reineſius* has publiſhed another huge Volume of *Inſcriptions*. M. *Fabretti* publiſhed another Volume at *Rome* in 1699, wherein he has corrected abundance of Errors that had eſcaped *Gruter*, *Reineſius*, and other Antiquaries, &c. and added a great Number of *Inſcriptions* omitted by them. Since all theſe, *Grævius* has publiſhed a compleat Collection of *Inſcriptions*, in three Volumes in *Folio*.

In *France* is an Academy of *Inſcriptions* and Medals, conſiſting of ten honorary and ten penſionary Members, ten Aſſociates, and as many Novices, who are to meet twice a Week, and to employ themſelves in the Examination of Medals and antient Monuments, and other Parts of *Greek* and *Roman* Literature, and to compoſe a Hiſtory of the Kings of *France*, from Medals. Such was the Academy at the time of its Inſtitution, or rather Reſtauration, in the beginning of this Century; but as they are not now wholly employed about Medals and *Inſcriptions*, they have changed their Name for one of a greater Latitude, and are called the Academy *des Belles Lettres*.

INSCRUTABLE, in Theology, is uſually underſtood of the Secrets of Providence, and the Judgments of God, which cannot be found out, or into which Human Reaſon cannot penetrate.

INSECTS, a kind of little Animals ſo called by the Antients, becauſe in ſome of 'em the Body ſeems to be cut; as in Ants, whoſe Belly ſeems divided into two: or perhaps, becauſe the Bodies of *Inſects* are compoſed of ſeveral Circles or Rings, as Worms, Caterpillars, &c. which are a kind of Inciſions, whence the Name might probably ariſe. Mr. *Ray*, in his *Methodus Inſectorum*, thus diſtinguiſheth the ſeveral kinds of *Inſects*. *Inſects* are either, 1. Ἀμεταμόρφωτα, or ſuch as do not change their Form: Or, 2. Μεταμορφούμενα, ſuch as do really change their Form. Thoſe that do not change their Form, are either, (1.) Ἄποδα, without Feet; or, (2.) *Pedata*, with Feet: and of theſe there are ſome kinds that caſt their Skins, and others that do not. *Inſects* without Feet are either Terreſtrial or Land-Inſects, or Aquatic. Terreſtrial *Inſects* are, 1*ſt*, either ſuch as are produced on the Land, or in the Earth, and not in Water; as the *Lumbrici Terreſtres*, which are either of the larger ſort, and are call'd Dew-Worms; or of a ſmaller ſize: And of theſe, there are ſome Red, and others Green with yellow Tails; which laſt are commonly call'd Gilt-Tails. Or, 2*dly*, ſuch as are found in the Bowels of Animals: And of theſe ſome are found in the Inteſtines of Men; as, (1.) The *Lumbrici Teretes*; (2.) *Lumbrici Lati*, which are alſo call'd *Tæniæ*; (3.) *Cucurbitini*, which ſome will have to be only the Fragments of the *Tæniæ*. (4.) The *Aſcarides*, which are chiefly found in the *Rectum*. Thoſe Worms which are found in the Inteſtines of Beaſts are of two ſorts, the *Oblongi*, and *Pellucidi*, of the thickneſs of an Horſe-hair, and therefore call'd *Vermiculi Setiformes*: And the *Breves* and *Craſſiores*, which often are found in Horſes, and are call'd the Botts. To this Genus of Terreſtrial *Inſects*, many natural Hiſtorians refer Snails, whether with or without Shells.

Water *Inſects* without Feet, not changing Form, are either, 1*ſt*, of the greater ſort, which have a peculiar way of moving, by firſt fixing their Head to the ground, and then drawing up their Tail towards it, &c. Of theſe, ſome are *Teretes*, round and ſmooth, of which there are three ſorts; as the Medicinal *Hirudines* or Leaches, the common black Horſe-Leaches, and the aſh-colour'd Sea-Leaches: But there is alſo a ſort of this kind, which is ſmaller and flatter, which are found ſticking to Stones in the bottom of little Brooks. Or, 2*dly*, of the Leſſer ſort, which have a different way of crawling or moving from the former. Theſe are alſo either round or flat: Of the round ſort, there is one that is black with two ſmall Horns on its Head, and is found ſticking to wet Stones in the watry Tops of Hills; and another which is red, of about a finger's length, with a Forceps at the Tail, found at the bottom of Fiſhponds, and ſtagnant Waters. The flat ſort are very ſmall and thin, and are call'd Flukes, being ſometimes found in Waters, and ſometimes in the Branches of the *Porus Bilarius* in Sheep.

Inſects not changing Form, and having Feet, are either, 1. *Hexapoda*, with 6 Feet. 2. *Octapoda*, with 8 Feet. 3. *Decateſſarapoda*, with 14 Feet. 4. *Polypoda*, with many Feet. Thoſe that have but ſix Feet, are either, (1.) Terreſtrial, and theſe are, firſt, of a larger kind; as, [1.] The yellowiſh *Inſect*, found in rotten decaying Oaks. [2.] The black one, on the Ground, called by *Mouffet*, *vermivorous*. [3.] The black one, living under Ground, with a Forceps at the Tail. [4.] A white ſort, with ſquare black Spots on its Back. [5.] The *Farinarium*, bred in Meal, of a whitiſh Colour. Or, ſecondly, a Smaller Sort; ſome of which are found about the Bodies of Animals: as, (1.) The *Cimex*, Bug or Wall-Louſe, of a ſtinking Smell. (2.) *Ricinus*, the Tick. (3.) *Pediculus*, the common Louſe. (3.) *Pediculus ferus ſeu inguinalis*, the Crab-Louſe. (5.) *Pulex*, the Flea; of all which there are various kinds. Others are not troubleſome to Animals, as, 1. One that in Bigneſs and Figure reſembles a Louſe, but is very nimble and ſwift, and is found in Books and rotten Wood. 2. Another there is with a very long Body, and a forcipital Tail. 3. The black *Inſect*, found often in the Flowers of the *Chelidonium*. 4. A ſubterraneous Sort, a little whitiſh. 5. One that skips like a Graſhopper, but is much leſs.

(II.) Aquatic; as, [1.] The *Pediculus Marinus Grandis*, which adheres to Fiſhes. [2.] The *Squilla Fluviatilis*, with a Pyramidal Tail, and two Hairs or Briſtles at the end. *Inſects* not changing Form, and having eight Feet, are either with a Tail, as the Scorpion, or without, as the Spider; of which ſome ſpin no Web, have but two Eyes, and very long Legs, as the *Opilio* or the Shepherd. Some do ſpin a Web, and of theſe they count three ſorts: 1. The *Aranea Colceſtrenſis Abdomine tumido, ſubrotundo, & elato*. 2. The Spider with the Thorax, or middle part of his Body, as big as the Abdomen. 3. The Spider with the long Abdomen, found among Reeds, Ruſhes, Graſs, &c. (2.) The *Ricini Octopedes*, which are ſome more flat and compreſs'd; as the rambling Ticks that run over the Bodies of Animals, but don't faſten; and ſome more round and thick, which do adhere to the Skin. (3.) The *Syrones* or Mites.

Inſects not changing Form, and with fourteen Feet, and therefore call'd Τεσσαρεσκαιδεκάποδα, are the *Aſelli*; of which there are three ſorts: As, 1. the *Sea-Aſellus*; the longeſt and largeſt of all; living amongſt the Rocks. 2. *Aſellus Lividus*, which rolls itſelf up into a Ball. The common Wood-Lice, Sows, or Cheſs-bugs. 3. *Aſellus Aſininus*, with a forked Tail; not rolling itſelf up. To this Species may be added, (1.) The *Aſellus Marinus figuræ brevioris*, rolling itſelf up. (2.) *Aſellus Aquarum dulcium*, with long Legs and two Briſtles on its Tail. (3.) *Pulex Aquaticus*, both in freſh and ſalt Water. (4.) *Pediculus Aquaticus*, which faſtens upon Fiſh.

Inſects not changing Form, with twenty-four Feet. Theſe have the eight Fore-Feet leſſer, and the ſixteen hinder-ones larger. There are two kinds of them obſerved; both with long Bodies, one larger and of an obſcure Colour, among the Rocks by the Sea-ſide; the other of a Silver Colour, found in Houſes. There is a Kind with thirty Feet, of an oblong Shape, Cheſnut Colour, and full flattiſh Body, uſually lying under Logs, and Trunks of Trees. It is very agile and ſwift.

Inſects, not changing Form, with many Feet, called, πολυπόδα, are ſome on Land, and either roundiſh in Body, with all their Legs riſing out of the middle of the Belly, (nearly) as the *Julus*, or more flat and compreſſed, with their Legs, not riſing, as before, from a Point in the middle of their Body, but growing along on the Sides; as the *Scolopendra*. And ſome of this kind are aquatic, of which Mr. *Ray* makes three Differences: (1.) The *Corniſh* Lugs, uſed for Baits in catching Fiſh, with 38 Legs, and a ſmooth roundiſh Body. (2.) The *Scolopendra Marina Corpore plano*. (3.) *Animalculum Bicorpor*, or rather *Bicaudatum*, lying in the Clefts of Stones, under the Salt-water.

Inſects which do really undergo a Change of their Form, are called Μεταμορφούμενα; of which *Swammerdam* hath given the beſt Account: Tho' he ſhews that this word is improperly uſed, ſince there is by no means any real Transformation, but only an Explication of the Parts of the Animal, latent before, in miniature, (as it were in the *Ovum*, or *Nympha*, like the Plant in the Seed) and an Increaſe of all the Parts by proper Degrees.

The firſt Species of Tranſmutation or Change, which *Swammerdam* makes the ſecond, is inſtantaneous, there being no ſenſible Reſt or Stop between the old and the new Form. And the *Inſects* of this Order do not loſe their Motion at the time they ſhift the *Pellicula*, at leaſt not to appearance. And *Swammerdam* deſcribes the ſecond Or-

der

der of Change to be, when the *Vermiculus* (leaving the former Shape of the *Nympha*, with which it appeared in the Egg, and ſubſiſted without Food) now beginning to feed, hath its Members or Parts viſibly increaſed and ſtretched out, and takes the Form of a new *Nympha*, which is not without Motion; and from thence becomes a flying *Inſect*. Of this ſort are, (1.) The *Libellæ*, or *Perlæ*, which are produced from an *Inſect* of ſix Feet, and which *Mouffet* takes for the *Pulex Marinus*, or, as before he calls it, *Locuſta Aquatica*. Out of the cruſtaceous Skin, or Husk, of this *Inſect*, the *Libella* breaks by a Fiſſure, which begins between the Eyes, and is continued to the Roots of the Wings, and is there joined to the lateral Fiſſures. (2.) The *Cimices Sylveſtres*, whoſe characteriſtic Marks (according to *Willoughby*) are, 1. A long *Proboſcis*, not ſpiral, but ſtrait. 2. Their upper Wings to the middle are thick, and like Leather; thence to the Ends thin and membranous. 3. There is the Figure of St. *Andrew's-Croſs* on their Backs. (3.) The *Locuſta*, which *Willoughby* refers to the Ἀμεταμόρφωτα. (4.) The *Grylli-Campeſtres*. (5.) The *Grylli-Domeſtici*, or Crickets. (6.) The *Grylio-Talpa*, Mole-Cricket. (7.) The *Cicada*, or Graſhopper. (8.) The *Blatta*, according to *Swammerdam*. (9.) The *Tipulæ Aquaticæ*, which run very ſwiftly on the Surface of the Water, and have a Sting in their Mouths like the *Cimices*, or *Ticks*. (10.) The *Scorpius Aquaticus*, with a Sting alſo in its Mouth. (11.) The *Muſcæ Aquaticæ*, called by *Androvandus*, *Apes Amphibiæ*. (12.) The *Hemerobius*, or *Ephemera*, or *Diaria* of *Swammerdam*. (13.) The *Forficula*, or *Auricularia*.

The ſecond Species of Tranſmutation includes ſuch *Inſects*, as undergo a double Metamorphoſis, or Change of Shape. (1.) Into a *Chryſalis*, or ſomething analogous to it. (2.) Into a flying *Inſect*. Theſe Kinds of *Inſects*, a while before they change, lie quite ſtill, without Feeding, or changing Place; and in reſpect of their Wings are, (1.) Κωλεόπτερα, or *Vaginipennia*, as the *Scarabæi*, Beetles. (2.) Ἀνελύτερα, whoſe Wings are open and expanded: And the Wings of theſe are either farinaceous, as the *Papiliones*, &c. or membranous, as the *Apes*, *Muscæ*, &c. and theſe are either Δίπτερα with two Wings, or Τετράπτερα, with four Wings.

The *Scarabæi* may be divided, (1.) In reſpect of their Horns, into the *Naſicornis*, *Bucerota*, and *Cervus volans*, or *Taurus*. (2.) In reſpect of their *Antennæ*, which are of many Kinds; whereof the moſt eminent are thoſe called *Capricorni*. (3.) With regard to their Motion, as the *Saltatrices* (4.) With regard to their Colour, as *Cantharides*. To the Beetle-kind may be referr'd the *Cicindela*, or Glow-Worm; the *Staphylinus* called by *Willoughby* ἡμικολεόπτερος; the *Proſcarabæus*, or Oil-Beetle, ſo called from its emitting from its Joints a kind of Oil, on its being preſſed or ſqueezed. The *Anelytra*, with farinaceous or mealy Wings, are called *Papiliones*, Butter-flies; and theſe are either Diurnal, or Nocturnal. The ſpecific Diſtinction of the Diurnal is, that they always ſettle with their Wings erect, are produced from an angulous *Aurelia*, and have their *Antennæ* ſtudded: of theſe there are about fifty ſorts obſerved in *England*. The nocturnal Butterflies, or *Phalænæ*, are vaſtly numerous, and cannot very clearly be methodized. But for Memory and Diſtinction's ſake, they may be divided into, (1.) The *Geometrigenæ*, which come from the *Eruca*, (called *Geometra* from the Manner of its Walk, which is *Anſatinus*, by curling up its Back like the Handle of a Cup) with 8 or 10 Feet. (2.) Such as come from *Erucæ* with 14 Feet: Of this kind, which is very numerous, there hath been diſtinguiſhed the *Phalæna Faſciata*, whoſe Wings are in Patches or Area's of different Colours. *Phalæna Lineata*, whoſe Wings are marked with tranverſe Lines. *Phalæna Punctata*, whoſe Wings are marked with one or more Points: and theſe excepted, all the others are diſtinguiſhed into greater and leſſer, and of a middle Size, between both. One of the larger Kinds may be diſtinguiſhed alſo by their inner Wings running out beyond the upper, when they ſit, or reſt: And another by the Appearance of the Figure of Eyes upon the Wings: And a third, by their long Tails, and narrow ſharp Wings; which by ſome are called *Phalænæ Prædatrices*, or *Accipitrinæ*. The *Anelytra*, with membranous Wings, are Bees, Flies, Waſps, *Bombylii*, *Crabrones*, &c. And to this kind the *Culex Vulgaris*, according to *Swammerdam*, or Gnat is referred; as alſo the *Formica*, or Ant. And hither muſt be referred ſuch Water *Inſects*, as are covered by a *Theca*, according to the Obſervations of *Willoughby*. Theſe have either, (1.) an immoveable *Theca*, or Caſe, which is fixed to the Stones; and this Caſe is either of a round Figure, or one more compreſs'd and flat, (2.) A moveable, portable *Theca*, and theſe are commonly called *Phryganæa*: And this *Theca* is either, (1.) Strait, and that either compoſed of Straws, and little *Feſtucæ* lying parallel one to another; of which there are two Kinds; a greater, where the *Feſtucæ* are two Inches long; and a leſſer, which are very common, and are called Straw-Worms. Or elſe the *Feſtucæ* lie tranſverſly, and are ſhorter, having ſometimes pieces of Shells, or Stones, intermixed with them: Others, whoſe Caſes are ſtrait alſo, have no *Feſtucæ*; but always either Sand, or Gravel: And of theſe ſome have the *Thecæ* round, and are called Cod-baits; others are flat and compreſſed. (2.) Crooked, or horned, which run tapering; of theſe Mr. *Ray* reckons four Kinds; a greater and leſs Black ſort; and a greater and leſs Aſh-colour'd one. Theſe all produce Flies with large Wings like Butter-flies.

The third Species of Tranſmutation, is a ſimple Change from a *Vermiculus* to a flying *Inſect*; but yet with a ſenſible ἀστάσια, reſt, or ſtop, between one Form and the other. This Change *Swammerdam* thus deſcribes: "The *Vermicle* "excluded from the Egg gets Nouriſhment by little and "little from without, and under that firſt Skin, or Cover-"ing, hath its Members increaſed by Degrees; not ſlip-"ping it, or putting it off as other *Vermiculi* do when they "change into *Nymphæ*, but aſſuming the Figure of a *Nym-"pha* in it: For a time it is quite motionleſs, till the ſu-"perfluous Moiſture is evaporated, and then, in a few "Days, recovers its Motion again, and caſting off "this Skin, which is as it were double, it becomes a Fly." Of this kind are our Fleſh-flies, and all the *Nymphæ Vermiformes*, the *Veſpæ Ichneumones*, &c.

As to the Generation of *Inſects*, the World is now generally convinced that they are not bred of Corruption, but *ex Ovo*; tho the contrary was believ'd by the Ancients, becauſe of the vaſt Numbers that were ſometimes hatch'd as it were at once, and becauſe they cou'd not diſcern the particular Manner of their Propagation. *Malpighi*, *Swammerdam* and *Redi*, have abundantly diſproved the Doctrine of Equivocal Generation, as well as the Chimerical Tranſformation of the Caterpillar into the Butter-fly, and other the like Metamorphoſes; and have ſhewn, that all the Members of the Butter-fly were encloſed under the Skin or *Nympha* of the Caterpillar, as the Parts of a Plant are in the Seed.

Inſects take particular Care to depoſite their Eggs, or Seed, in ſuch Places where they may have a ſufficient Incubation, and where the Young when hatch'd may have the Benefit of proper Food till they become able to ſhift for themſelves. Thoſe whoſe Food is in the Water, lay their Eggs in the Water; thoſe to whom Fleſh is a proper Food, in Fleſh; and thoſe to whom the Fruits, or Leaves of Vegetables are Food, are accordingly repoſited, ſome in this Fruit, ſome in that Tree, and ſome in that Plant, and ſome on another, but conſtantly the ſame Kind on the ſame Tree, &c. As for others that require a more conſtant and greater Degree of Warmth, they are provided by the Parent Animal with ſome Place in or about the Body of other Animals; ſome in the Feathers of Birds, ſome in the Hair of Beaſts, ſome in the Scales of Fiſhes, ſome in the Noſe, ſome in the Fleſh, nay ſome in the Bowels, and inmoſt Receſſes of Man, and other Creatures. And as for others to whom none of thoſe Methods are proper, they make them Neſts by Perforation in the Earth, in Wood, in Combs, and the like, carrying in and ſealing up Proviſions that ſerve both for the Production of their Young, and for their Food, when produced.

In Flies, Butter-flies, &c. it is obſerv'd, there is a kind of Gluten, by which the Female faſtens her Eggs to the bearing Buds of Trees, &c. ſo that the Rains cannot waſh them off. Theſe Eggs will not be hurt by the greateſt Froſt. Mr. *Andry*, in his Book *De la Generation de Vers dans le Corps de l'Homme*, takes notice, that the Antients were miſtaken in denying that *Inſects* did breathe, on the account of their wanting Lungs: For modern Obſervations convince us, that *Inſects* have a greater Number of Lungs than other Animals. The Antients thought alſo that *Inſects* had no Blood, becauſe many of them had no red Liquor like our Blood: But it is not the Colour, but the Uſe of the Liquor that is to be regarded. They believed alſo that *Inſects* had no Hearts; whereas our Microſcopes do now diſcover, that when *Inſects* have ſeveral Lungs, they have alſo ſeveral Hearts; and in particular, it is found, that Silk-Worms have a continued Chain of Hearts, from the Head almoſt to the very Extremity of the Tail. And it is this Number of Hearts and Lungs that occaſions thoſe *Inſects* to give Signs of Life a long while after they are divided into ſeveral Parts. He obſerves alſo, that it is wrong to call *Inſects* imperfect Animals, ſince they want no Parts either neceſſary or convenient for their Uſe, or to render them compleat in their Kind. There are ſome, who affirm that the Earth-Worms, and thoſe Round-tailed Worms, which are found in the Inteſtines of Men and Horſes, &c. alſo Snails and Horſe-Leaches are Hermaphrodites; but that ſuch Worms as become Flies, and Silk-Worms are not ſo, being of no Sex, but are Neſts full of real Animals, which we ſee in time come out with Wings.

The Moderns have proceeded much further in the Knowledge of *Insects* than the Antients, as having the Advantages of the Microscope which distinguishes their minute Parts, whereof they have publish'd Draughts and Descriptions. Dr. *Hook* has publish'd a Micrography in *Folio*; and *Fran. Redi*, a Physician at *Florence*, has publish'd several Figures with new and curious Experiments of his own. Sig. *Malpighi*, *Bartholin*, the *Philosophical Transactions* of *London*, *Paris*, and *Leipsic*, have a great Number of fine Observations and Experiments on *Insects*. *Swammerdam* has written a general History of *Insects* in *Dutch*, and assures us, there are above 400 Writers on this Subject; among others are *Wotton*, *Gesner*, *Aldrovandus*, *Mouffet*, *Harvey*, *Fabricius ab Aquapendente*, *Goedart*, &c. *Hoeffnagel*, Painter to the Emperor *Rudolphus*, has given very good Designs of above 300 Species, *Goedart* has described above 400, and Mr. *Albin* has given us a new History of our *English Insects*, with very beautiful Figures.

INSEMINATION, one of the four Kinds of Transplantation, in use for the Cure of certain Diseases. It is performed by mixing the Medium impregnated with the *Mumia* taken from the Patient with some fat Earth wherein has been sown the Seed of a Plant appropriate to that Disease; but Care must be taken from time to time to sprinkle it with the Water wherein the Part affected has been wash'd. 'Tis supposed the Diseases will decline in proportion as the Plant grows. By *Mumia*, is here meant a Part of the vital Spirit of the Patient.

INSERTION, a Term frequently us'd in Physic, to signify the Implication of one Part within another. The *Insertion* of the Bones, Muscles, and Nerves in the Members of an Animal, is exceedingly artful. The *Vena Cava* has its *Insertion* in the right Ventricle of the Heart. *Insertion* is also used in Agriculture for the Inclosing a Graft within the Cleft of a Tree.

INSESSUS, is a kind of Half-Bath, usually prepared with a Decoction of several Herbs, proper for the lower Parts, wherein the Patient sits down to the Navel. It has several Uses, as the easing of Pain, softening of Parts, dispelling of flatulent Matter, and frequently, promoting of the *Menses*.

INSINUATION, a cunning and covert way of creeping into Favour. *Insinuation* of a Will, among the Civilians, is the first Production of it, or the leaving it with the Register in order to its Probate.

INSIPID, that which has nothing in it sharp or pungent enough to affect the Palate, Tongue, &c. and to occasion that Sensation we call Tasting.

INSITIO, a Term in Botany, used in the same Sense with engrafting; signifying in general the Insertion and Uniting of any Cyon, Bud, &c. into the Substance of the Stock: And is of various kinds.

INSOLATION, in Pharmacy, is a Preparation of Fruits, Drugs, &c. by exposing them to the Heat of the Sun's Rays; either to dry them, or to bake or sharpen them, as is done in Vinegar, Figs, &c. The Word comes from the *Latin* Verb *insolare*, which is used by *Pliny* and *Columella*, and signifies to *expose to the Sun*.

INSOLVENT, a Term applied to such Persons as have not wherewithal to pay their just Debts: A Person dying, and not leaving Estate sufficient to discharge these, is said to die *insolvent*.

INSPECTOR, a Person to whom the Care and Conduct of any Work is committed.

The *Jews* have an Officer in their Synagogue, whom they call *Inspector*, חזן, *Hhazan*. His Business consists principally in inspecting or overlooking the Prayers and Lessons, in preparing and shewing them to the Reader, and in standing by him to take care he reads right, and if he make Mistakes, to correct him. In the *Roman* Law, *Inspectors* were such Persons as examin'd the Quality and Value of Lands and Effects, in order to the adjusting or proportioning Taxes and Impositions to every Man's Estate.

INSPIRATION, among Divines, &c. implies the conveying of certain extraordinary and supernatural Notices or Motions into the Soul. Thus the Prophets are said to have spoken by Divine *Inspiration*; and the Sinner is converted, when he ceases to resist the *Inspiration* of Grace. Some Authors reduce the *Inspiration* of the Sacred Writers to a particular Care of Providence, which prevented any thing they had said from failing, or coming to nought; maintaining they never were really inspired, either with Knowledge or Expression. According to M. *Simon*, *Inspiration* is no more than a Direction of the Holy Spirit, which never permitted the Sacred Writers to be mistaken. And it is a common Opinion, that the *Inspiration* of the Holy Spirit regards only the Matter, not the Style or Words; which seems to fall in with M. *Simon*'s Doctrine of Direction. Among the Heathens, their Priests and Priestesses were said to be divinely inspired when they gave Oracles. The Poets, too, laid claim to it; and to this end, always invoked *Apollo* and the Muses at the beginning of any great Work.

Inspiration, in Physic, is understood of that Action of the Breast, by which the Air is admitted within the Lungs. This Admission of the Air depends immediately on its Spring or Elasticity, at the time when the Cavity of the Breast is enlarged by the Elevation of the Thorax and Abdomen, and particularly by the Motion of the Diaphragm downwards: so that the Air does not enter the Lungs, because they are dilated; but those dilate, because the Air enters within them. Nor is it the Dilatation of the Breast which draws in the Air, as is commonly thought; tho this is a Condition absolutely necessary to *Inspiration*, but an actual Intrusion of the Air into the Lungs. See *Respiration*.

INSPISSATE, a Term used in Pharmacy for that Operation whereby a Liquor is brought to a thicker Consistence, by evaporating the thinner Parts: and thus Juices, as that of Liquorice, are *inspissated*.

INSTALMENT, is a Settlement, or instating any Person in his proper Place. It is sometimes confounded in Law with Abatement. The Word is chiefly used for the Induction of a Dean, Prebendary, or other Ecclesiastical Dignitary into the Possession of his Stall, or proper Seat in the Cathedral Church to which he belongs: it is sometimes called *Installation*. This Term is likewise commonly used for that Ceremony wherein the Knights of the Garter are placed in their Rank at *Windsor*. The Word is derived from the *Latin in* and *Stallum*, a Term used for a Seat in Church, in the Choir, or a Seat or Bench at a Court of Justice, &c. Tho *Vossius* is of opinion, the Word is pure *German*.

INSTANT, is such a part of Duration, wherein we perceive no Succession; or is that which takes up the time of only one Idea in our Minds. The Schools distinguish three kinds of *Instants*; a temporary, a natural, and a rational *Instant*. A temporary *Instant* is a part of Time immediately preceding another: Thus the last *Instant* of a Day precedes immediately and really the first *Instant* of the following Day. A natural *Instant* is what we otherwise call a Priority of Nature, which is observed in things that are subordinated in acting; as first and second Causes; Causes and their Effects. For the nature of things requires, that if there be a second Cause, there must be a first; and that there must be a Cause, if there be an Effect. A rational *Instant*, is not any real *Instant*, but a Point which the Understanding conceives to have been before some other *Instant*, founded on the nature of the things which occasion it to be conceiv'd. For instance, as God has made several things voluntarily, which he could, otherwise, have let alone; there is a reasonable Foundation to conceive God such as he is in himself, before he had made any of those voluntary Determinations: but as there was no real *Instant*, when God had not form'd any Determination, this *Instant* is call'd a rational *Instant*, by way of opposition to an *Instant* of Time.

INSTAURATION, the Re-establishment of a Religion, a Church, &c. The Word is derived from the old *Latin Instaurum*, which signified every thing necessary for the tilling and managing of Grounds; as Cattel, Tools, Harness, &c.

INSTINCT, a Disposition or natural Sagacity wherewith Animals are endued, by virtue whereof they are enabled to provide for themselves, know what is good for them, and determined to preserve and propagate the Species. It bears some Analogy to Reason, and supplies the Defect of it in Brutes.

INSTITUTE, to ordain, found, or establish any thing. Thus *Moses instituted* the Ceremonies of the Old Law, and Jesus Christ the Sacraments of the New.

INSTITUTION, is the Act of the Bishop, or one commission'd by him to act, whereby any Clerk is invested with the Spiritualities of a Rectory or Vicarage. The Clerk kneels down before the Bishop, whilst he pronounces these Words of *Institution*: (*Instituo te Rectorem Ecclesiæ de* A. B. *cum Curâ Animarum, & accipe Curam tuam & meam*) and the Clerk holds the written Instrument, with the Episcopal Seal annexed, in his hand during the Ceremony. But the Clerk must have Induction after this, without which he has no Right to his Temporalities, if the Benefice be not a Donative. Before the Clerk is instituted, he must subscribe the 39 Articles of Religion, in the Presence of the Ordinary (or his Substitute) and the Ordinary is not bound to offer them, but the Clerk is to offer to subscribe them: and he must subscribe them without Reserve, Exception, or Qualification, or else his *Institution* is *ipso facto* void, and null, and the Church is still vacant. At the same time the Ordinary requires the Clerk to subscribe the other two Articles, mention'd in the 26th Canon about the King's Supremacy, and the Lawfulness and Use of the Liturgy. The Clerk must also before *Institution* subscribe to that part of the Declaration enjoin'd by the Act of Uniformity, 14 *Car.* 2. *c.* 24. viz.

I will conform to the Liturgy of England, *as by Law eſtabliſhed.* Before *Inſtitution*, he muſt alſo take the Oaths mention'd in the firſt Statute of *William* and *Mary*, *c.* 8. inſtead of the former Oaths of Allegiance and Supremacy required by *Stat.* 1 *Eliz.* And then he muſt take the Oath againſt Simony, enjoin'd by the 40th Canon, and the Oath of Canonical Obedience. And he is to have Certificates given him of his ſubſcribing the Declaration contained in the Act of Uniformity, in *Engliſh*, in a diſtinct Inſtrument, under the Hand and Seal of the Biſhop; and of his other Subſcriptions and Oaths in *Latin*. The Clerk ought by all means to have Witneſſes of his *Inſtitution*, his taking the Oaths, making Subſcriptions, *&c.* and therefore he ſhould deſire ſome preſent to write their Names on the back of his Inſtruments; and make Memorandums who they are, and where they live. The Church, by *Inſtitution*, is full againſt all Perſons, but the King; and the Clerk by it may enter upon the Glebe, and take the Tythes: but he cannot let or grant them, nor ſue for them, if they are refuſed to be paid. After *Inſtitution* the Clerk is to receive a written Mandate from the Ordinary to the Arch-Deacon, or other proper Perſon, in order to his Induction: which ſee.

INSTITUTIONS, or *Inſtitutes:* Part of the firſt of the four Tomes or Volumes of the Civil Law; being a Compendium or Summary of the whole in four Books, compoſed by *Tribonianus*, *Theophilus* and *Dorotheus*, by order of the Emperor *Juſtinian*, for the Uſe of young Students; who having the firſt Elements of the whole Profeſſion in this little Treatiſe, might the ſooner gain a competent Knowledge of it, without being diſcouraged by the Bulk of the former Books. *Inſtitutions* are likewiſe a Syſtem of Laws, or Rules in any particular Science; and ſo Phyſical or Medicinal *Inſtitutions* are ſuch as teach the neceſſary *Præcognita* to the Practice of Medicine, or the Cure of Diſeaſes.

INSTRUMENT, properly ſignifies any thing that ſerves as a Cauſe to produce an Effect.

Inſtrument, is alſo uſed in Law to ſignify ſome public Act or authentic Deed, by means whereof any Truth is made apparent, or any Right or Title eſtabliſh'd in a Court of Juſtice.

Inſtruments of Sacrifice, are Ornaments in the Antique Architecture; as Vaſes, Pateræ, Candleſticks, Knives, wherewith the Victims were kill'd, *&c.* Inſtances of which, we ſee in a Corinthian Freeze in the Remains of a Temple behind the Capitol at *Rome*, *&c.*

INSULATED, by the *French* called *Iſolée*, and the *Latins Inſulatus*; is a Term apply'd to a Column that ſtands alone, or free from any contiguous Wall, *&c.* like an Iſland in the Sea; whence the Word is derived.

INSULT, a Military Term, uſed for the attacking of any Poſt with open Force, without the Apparatus of Trenches, Saps, or any regular Approaches.

INSUPER is a Word uſed by the Auditors of the *Exchequer:* In their Accompts, they ſay, ſo much remains *inſuper* to ſuch an Accomptant; that is, ſo much remains due on ſuch an Accompt.

INSURANCE, is Security given in Conſideration of a Sum of Money paid in hand, to make good Ships, Merchandizes, Houſes, *&c.* to the Value of that for which the Reward is received, in caſe of Loſs by Storm, Pirates, Fire, *&c.*

INTACTÆ are Right Lines to which Curves do continually approach, and yet can never meet with them: Theſe are uſually called *Aſymptotes*, which ſee.

INTAGLIO's, precious Stones, having the Heads of great Men, Inſcriptions, and the like, engraven on 'em; ſuch as we frequently ſee ſet in Rings, Seals, *&c.*

IN-TAKER, a Name antiently given to certain Banditti or Robbers, who inhabited a part of the *North* of *England*, and who made frequent Excurſions into the very middle of *Scotland*, plundering the Inhabitants wherever they came. Thoſe who made the Expeditions were called *Out-Parters*, and thoſe who were left behind to receive the Booty *In-Takers*.

INTEGERS, from the *Latin Integrum*, ſignifies, in Arithmetic, whole Numbers, in contradiction to Fractions.

INTEGRAL: the *Integral* Calculus in the new Analyſis, is that which anſwers to the differential Calculus. This laſt has been compleatly explained by the Marquiſs *de l'Hoſpital*, but the other ſtill remains imperfect, having been but little cultivated.

Integral, among the Schoolmen, is underſtood of thoſe Parts which enter the Compoſition of any Whole. Thus the Arms, Legs, *&c.* are *integral* Parts of the Body.

INTEGUMENT, a Term in Anatomy, applied to the Skins or Membranes, which cover the Parts within the Body, as the Coats or Tunics of the Eye. The word is originally *Latin*, and ſignifies any kind of Covering.

INTELLECT, a Term uſed among the Philoſophers, to ſignify that Faculty of the Soul, uſually called the Underſtanding. The *Peripatetics* make two kinds of *Intellect*, the Active and the Paſſive; the Active is that which receives the impreſſed Species emitted by Objects to the exteriour Senſes, which convey to the common Senſorium. Theſe impreſſed Species being material and ſenſible, are rendered intelligible by the Active *Intellect*, and fit to be received into the Paſſive *Intellect*. The Species, ſo ſpiritualized, are called expreſſed Species, as being expreſſed from thoſe others impreſſed, and it is by theſe that the *Intellect* comes to know material things: in effect, however, the two *Intellects* have nothing really diſtinct from each other.

INTELLIGIBLE, any thing capable of being underſtood or conceived by the Mind. The Philoſophers have invented certain Beings that are purely intelligible, and only ſubſiſt in the Underſtanding; ſuch are the *Entia Rationis*, Univerſal Ideas, and other Chimeras. The *intelligible*, or intellectual World, is the Idea of the World in the Divine Mind, frequently referred to by *Malebranch*.

INTENDANT, one who has the Conduct, Inſpection, and Management of any thing. This is a Title very frequent among the *French:* they have their *Intendants* of the Marine, who are Officers in the Sea-Ports, whoſe Buſineſs is to take care the Ordinances and Regulations relating to Sea-Affairs be obſerved; *Intendants* of the Finances, who have the Direction of the Revenues; *Intendants* of Provinces, who are appointed by the King, to take care of the Reformation of Juſtice, Policy, and Finances in the Provinces; *Intendants* of Buildings, of Houſes, *&c.*

INTENDMENT OF LAW, the Underſtanding, Intention, and true Meaning of the Law. The Judges ought to judge according to the common *Intendment* of the Law. *Coke.*

INTENT, in the Civil Law, is to begin or commence an Action or Proceſs.

INTENTION, in Law, is a Writ which lies againſt him who enters after the Death of the Tenant in Dower, or other Tenant for Life, and holds out him in the Reverſion or Remainder.

INTENTION, in Phyſic, is that Judgment or particular Method of Cure, which a Phyſician forms to himſelf from a due Examination of Symptoms.

In Phyſics, it ſignifies the Increaſe of any Power or Quality, as Heat, Cold, *&c.* as Remiſſion ſignifies its Decreaſe or Diminution.

In Metaphyſics, it is uſed for the Exertion of the intellectual Faculties with more than ordinary Vigour: When the Mind with Earneſtneſs fixes its View on any Idea, conſiders it on all ſides, and will not be called off by any Sollicitation.

The Schoolmen alſo uſe the Terms firſt and ſecond *Intention*. A Term of firſt *Intention* is that which ſignifies a thing; the firſt *Intention* of Man, in eſtabliſhing Words, being to expreſs Things, or the Ideas they have of Things. A Thing of ſecond *Intention* is that which does not ſignify a Thing, but another Term or Sign. Thus a Tree, a Man, *&c.* are Terms of firſt *Intention*, and the Terms in Rhetoric, Grammar, *&c.* as Figure, Kind, *&c.* are Terms of ſecond *Intention*.

INTERCALARY-DAY, is uſually underſtood of the odd Day inſerted in the Leap-Year. The Word is derived from the *Latin Intercalaris*, of *Calo calare*, which antiently ſignified to *call with a loud Voice:* an *Intercalary* among the *Romans* ſignifying a Day inſerted between two other Days; which for that reaſon was proclaim'd by the Prieſts with a loud Voice.

INTERCOLUMNS, or *Intercolumniation*, in Architecture, ſignify the Spaces between the Columns. The *Intercolumns* muſt always be proportion'd to the Height and Bulk of the Columns. *Vitruvius* calls it *Intercolumnium:* And according to that Author, the *Intercolumniation* is of five kinds; *viz.* Pychnoſtyle, Siſtyle, Euſtyle, Dioſtyle, and Araeoſtyle: which ſee explain'd in their places. For a Medium, ſome Authors have laid down the following Proportions for the *Intercolumns*. In the Tuſcan Order, the *Intercolumn* muſt be four Diameters of the Body of the Column below; in the Doric three; in the Ionic two; in the Corinthian two, one quarter; in the Compoſite one and a half.

INTERCESSOR, a Perſon who prays or intercedes in behalf of another. In the *Roman* Law *Interceſſor* was the Name of an Officer, whom the Governours of Provinces appointed principally to raiſe Taxes and other Dues. See *the third Law of Juſt. Code.*

Interceſſor was alſo a Term heretofore applied to ſuch Biſhops, as, during the Vacancy of a See, adminiſter'd the Biſhopric, till a Succeſſor to the deceaſed Biſhop had been elected. The third Council of *Carthage* calls theſe *Interventors*. The word *Interceſſor* comes from the *Latin inter* and *cedo*, *I go between.*

INTERCOMMONING, is when the Commons of two Mannors lie together, and the Inhabitants of both have

time

time out of mind cauſed their Cattel to feed promiſcuouſly in each.

INTERCOSTAL, in Anatomy, ſignifies any thing between the Ribs. There are two *intercoſtal* Nerves, which are ſo call'd, becauſe in deſcending they paſs near the Roots of the Ribs. They are formed in the Brain, by three Branches of Nerves, two whereof come from the ſixth Pair, and the third from the fifth. The *intercoſtal* Nerves have a great Communication with thoſe of the eighth Pair, and ſend ſeveral Branches to the Breaſt and lower Ventricle. There are alſo two *intercoſtal* Arteries; the upper, which comes from the Subclavian, and diſtributes itſelf within the four Spaces of the upper Ribs; and the under, which comes from the lower Trunk of the great Artery, and diffuſes itſelf within the Spaces between the eight lower Ribs and the neighbouring Muſcles. There is alſo a Vein call'd *Intercoſtal*, which ariſes from the four Spaces between the upper Ribs, and terminates in the Subclavian.

Intercoſtal Muſcles are the external and internal, which are forty-four in number, one of each ſort being between every two Ribs: They ariſe from the lower Edges of each ſuperior Rib, and are inſerted into the upper Edges of each inferior Rib. Their Fibres croſs one another; thoſe of the external run obliquely from the back-part forwards; but thoſe of the internal from the fore-part backwards: they are thin and fleſhy.

INTERDICT, a Cenſure inflicted by a Pope or Biſhop, ſuſpending the Prieſts from their Functions, and depriving the People of the Uſe of Sacraments, Divine Service, and Chriſtian Burial.

Interdict is properly underſtood of a general Excommunication of a Country or City, as appears by the Decretals. There is a local and a perſonal *Interdict*; where theſe two are join'd, the *Interdict* is ſaid to be mix'd. This Puniſhment, as well as general Excommunications, were but little known till the Time of Pope *Gregory* VII. In Excommunicating a Prince, all his Adherents, that is, his Subjects who retain their Allegiance, are excommunicated, and the whole Country is under an *Interdict*. In the Reign of King *John*, the Kingdom of *England* lay under a Papal *Interdict* for above ſix Years together: It began *A. D.* 1208. In Imitation of the Popes, the Biſhops alſo began to *interdict*; and it became a common thing for a City or Town to be excommunicated for the ſake of a ſingle Perſon whom they undertook to ſhelter. But this Severity was found to have ſuch ill Effects, that they have been oblig'd to moderate it. An *Interdict* is denounced, and taken off again, with the ſame Formalities as an Excommunication.

In the Common Law, the word *Interdiction* is uſed alſo in the ſame Senſe as in the Canon Law, where it is defin'd to be *Cenſura Eccleſiaſtica prohibens Adminiſtrationem Divinorum.*

Interdicts, in the *Roman* Law, were certain *Formulæ* of Words, by which the Prætor, when the Poſſeſſion of any thing was conteſted between many, order'd or forbid ſomething to be done with it, till the Buſineſs of Right or Property ſhould be legally determin'd. Which *Formulæ* were call'd *Interdicts*, becauſe they related to the Poſſeſſion of the thing in the *interim*; or till the Right was aſcertain'd. They had three kinds of *Interdicts*, *Prohibitoria*, *Reſtitutoria*, and *Exhibitoria*. *Prohibitoria* were thoſe by which the Judges forbad any one to vex another in the Poſſeſſion of any thing legally belonging to him. *Reſtitutoria* were thoſe by which the Judges appointed any one, who had been expelled out of his Eſtate, to be repoſſeſſed before his Right was legally aſcertain'd; and this was the ſame with what they call'd the *Reintegrant*. *Exhibitoria* were thoſe by which any thing in diſpute was order'd to be exhibited, as a Teſtament, &c.

There was alſo a ſecond Diviſion of *Interdicts*, *viz.* into *Adipiſcendæ*, *Retinendæ*, and *Recuperandæ*. The firſt tended to the acquiring a new Poſſeſſion, as the *Interdict quorum bonorum*, &c. the ſecond to the keeping an old one till it was further determin'd, as the *Uti poſſidetis*, &c. the laſt to the recovering one loſt, as *Unde vi*, &c.

Interdiction of Water and Fire; a Sentence antiently pronounced againſt ſuch, as for ſome Crime were to be baniſh'd. They were not directly adjudged to Baniſhment; but by giving order that no body ſhould receive them, but deny them Fire and Water, they were condemned, as it were, to a Civil Death; and this they call'd *Legitimum Exilium*. *Livy*.

INTEREST, is the Sum reckoned for the Loan and Forbearance of ſome principal Sum lent for, or due at a certain time, according to ſome certain Rate, and therefore called Principal, becauſe it is the Sum that procreates the *Intereſt*, or from which the *Intereſt* is reckoned, and is either Simple or Compound.

(1.) Simple *Intereſt* is counted from the Principal only, and is eaſily computed by the Simple or Compound Golden Rule, thus: Let that which is the principal Cauſe of the *Intereſt* be put in the firſt place, and that which betokeneth Time be in the ſecond place, and the remaining in the third; under this conditional Part place the two other Terms, each under its like, and there will be a Blank to ſupply under one of thoſe above, either under the firſt, ſecond, or third: As for Example, if 100 *l.* in twelve Months gain 6 *l.* (this is the conditional Part) what ſhall 50 *l.* get in three Months? Place them down as in the Rule.

l.	*Months.*	*l.*
100	12	6
50	3	

Here the Blank will be under the third Place, multiply the three laſt for a Dividend, and the two firſt for a Diviſor, the Quotient of theſe gives the ſixth; that is, $6 \times 50 \times 3 = 900$, and $100 \times 12 = 1200$. Now 1200) 900.0(73 = 15 *s.* required. But if the Demand had been, In how many Months would 50 *l.* have gained 15 *s.* or if 100 *l.* in twelve Months gain 6 *l.* what ſhall the Principal be that in three Months would gain 15 *s.* In theſe two Caſes the Blank would have been under the firſt or ſecond Term: Then, by the Rule, multiply the firſt, ſecond, and laſt for a Dividend, and the third and fourth for a Diviſor; the Quotient is the Anſwer.

l.	*Months.*	*l.*
100	12	6
3	75 = 15 *s.*	

Then by the Rule $100 \times 12 \times 75 = 900.00$ and $6 \times 3 = 18$) 900. (50 *l.* required.

This Rule ſhews Simple *Intereſt*, and all that belongs to it with Eaſe, and was thus found: Put P for the Principal, T for the Time, and G for the Gain in the Conditions, and p, t, g anſwering, it will be, $P : G :: t : p : \frac{G\,p}{P}$. And $T : Gp :: t : \frac{G\,p\,t}{T\,P} = g$, which is the firſt Rule; that is, multiply the three laſt for a Dividend, and the two firſt for a Diviſor. And becauſe $\frac{G\,p\,t}{T\,P} = g$, therefore $G\,t\,p = T\,P\,g$, and conſequently $t = \frac{T\,P\,g}{G\,p}$ and $p = \frac{T\,P\,g}{G\,t}$, which is the ſecond Rule.

(2.) *Compound Intereſt* is that which is counted from the Principal, and Simple *Intereſt* forborn, called alſo *Intereſt upon Intereſt*; but becauſe this hath now no Place in human Affairs, it being rendered illegal, it is not worth while to know how to compute it. But beſides the ways of computing *Intereſt*, we ſhall here give another very plain, eaſy, and ready Method of computing all Simple *Intereſt* and Diſcount; as alſo the way to find the Amount or preſent Value of any Sum of Money, or of any Annuity, or other yearly Payment, &c. for any Term not exceeding an hundred Years. And in order to this, the following Table of Shillings, Pence, and Farthings, reduced to the Decimal Parts of Pounds, is previouſly neceſſary.

SHILLINGS, PENCE, and FARTHINGS, reduced to the Decimal Parts of a POUND.

s.	d.	Decimal Parts of a Pound.	s.	d.	Decimal Parts of a Pound.	s.	d.	Decimal Parts of a Pound.	s.	d.	Decimal Parts of a Pound.
—	—		—	—		--1	--2¼	.059375	--1	--9½	.089583
—	—¼	.001042	—	--7¼	.030208	--1	--2½	.060417	--1	--9¾	.090625
—	—½	.002083	—	--7½	.03125	--1	--2¾	.061458	--1	10	.091667
—	—¾	.003125	—	--7¾	.032292	--1	--3	.0625	--1	10¼	.092708
—	--1	.004167	—	--8	.033333	--1	--3¼	.063542	--1	10½	.09375
—	--1¼	.005208	—	--8¼	.034375	--1	--3½	.064583	--1	10¾	.094792
—	--1½	.00625	—	--8½	.035417	--1	--3¾	.065625	--1	11	.095833
—	--1¾	.007292	—	--8¾	.036458	--1	--4	.066667	--1	11¼	.096875
—	--2	.008333	—	--9	.0375	--1	--4¼	.067708	--1	11½	.097917
—	--2¼	.009375	—	--9¼	.038542	--1	--4½	.06875	--1	11¾	.098958
—	--2½	.010417	—	--9½	.039583	--1	--4¾	.069792	--2	—	.1
—	--2¾	.011458	—	--9¾	.040625	--1	--5	.070833	--3	—	.15
—	--3	.0125	—	10	.041667	--1	--5¼	.071875	--4	—	.2
—	--3¼	.013542	—	10¼	.042708	--1	--5½	.072917	--5	—	.25
—	--3½	.014583	—	10½	.04375	--1	--5¾	.073958	--6	—	.3
—	--3¾	.015625	—	10¾	.044792	--1	--6	.075	--7	—	.35
—	--4	.016667	—	11	.045833	--1	--6¼	.076042	--8	—	.4
—	--4¼	.017708	—	11¼	.046875	--1	--6½	.077083	--9	—	.45
—	--4½	.01875	—	11½	.047917	--1	--6¾	.078125	10	—	.5
—	--4¾	.019792	—	11¾	.048958	--1	--7	.079167	11	—	.55
—	--5	.020833	--1	—	.05	--1	--7¼	.080208	12	—	.6
—	--5¼	.021875	--1	—¼	.051042	--1	--7½	.08125	13	—	.65
—	--5½	.022917	--1	—½	.052083	--1	--7¾	.082292	14	—	.7
—	--5¾	.023958	--1	—¾	.053125	--1	--8	.083333	15	—	.75
—	--6	.025	--1	--1	.054167	--1	--8¼	.084375	16	—	.8
—	--6¼	.026042	--1	--1¼	.055208	--1	--8½	.085417	17	—	.85
—	--6½	.027003	--1	--1½	.05625	--1	--8¾	.086458	18	—	.9
—	--6¾	.028125	--1	--1¾	.057292	--1	--9	.0875	19	—	.95
—	--7	.029167	--1	--2	.058333	--1	--9¼	.088542			

Examples of the Uſe of the preceding TABLE.

What Decimal Part of a Pound is 7 *d*? Look in the Table for 7 *d.* and even with it you will find 029167, which is the Decimal required. What Decimal Part of a Pound is 17 *s.* 6 *d*? You will find the Decimal of 17 *s.* to be 85, and the Decimal of 6 *d.* to be 025; which added, makes 875. and anſwers the Queſtion. What is the Value of this Decimal .09375 in Shillings, Pence, and Farthings? Look in the Table, and you will find it to be 1 *s.* 10 *d.* ½. Obſerve, that if you cannot find in the Table the exact Decimal ſought for, to take that which is neareſt to it, and you can never err above half a Farthing. Knowing thus the Uſe of theſe Decimal Tables, all the Buſineſs of *Simple Intereſt* will be very eaſily underſtood, and diſpatched as followeth.

The yearly *Intereſt* of any Sum of Money is had, by only multiplying the principal Sum by the hundredth Part of the Rate of *Intereſt*: For the Product in Decimals is the true Anſwer. For Example, what is the Intereſt of 75 *l.* for one Year, at the Rate of ſix *per Cent*?

75 = Principal.
06 = the hundredth Part of 6 *l.*

l. s. d.

4.50 the Product, which is 4 10 00

What is the yearly Intereſt of 157 *l.* 17 *s.* 6 *d.* at 5 *l. per cent*?

157.875 is the Decimal for 157 *l.* 17 *s.* 6 *d.*
05 the Hundredth Part of five Pounds.

7.89375 which is the Decimal anſwering to 7 *l.* 17 *s.* 10 *d.* ½, the *Intereſt* of 157 *l.* 17 *s.* 6 *d.* for one Year at 5 *l. per Cent.* and ſo for any other Rate or Sum whatſoever. When thus the *Intereſt* for one Year is found, divide it by 365, and the Quotient will be the *Intereſt* for one Day. Thus 01 being the *Intereſt* of one Pound for one Year, if you divide that Decimal by 365, (continuing the Work as long as you pleaſe) you will have 000027397260 28, *&c.* for a Quotient, which will be the Intereſt of one Pound for one Day, and at one *per Cent.* Then will this Decimal 000027, *&c.* found as above, if you multiply it continually by the Principal, the Number of Days, and the Rate of *Intereſt*, become of itſelf an *Intereſt*-Table for any Sum of Money, for any Time, and at any Rate: As for Example, what is the Intereſt of 150 *l.* for 365 Days at 6 *l. per Cent.*

000027397260 28
150

410958904200
365

150000000033000
6

9.000000001980 00, which Decimal gives the Anſwer, near enough for any Uſe, to be nine Pounds.

By the ſame Rule .02 divided by 365, will give, in the Quotient, the Intereſt of one Pound for one Day, at 2 *per Cent.* and 03, divided by 365, will do the ſame at 3 *per Cent.* and thus theſe Numbers following were found.

The Intereſt of one Pound for one Day, at all Rates, from 1 to 10 *per Cent.*

At 1 *l. per Cent.* is 000027397260, *&c.* as above.
2 —— 000054794512
3 —— 000082191781
4 —— 000109589041
5 —— 000136986301
6 —— 000164383562
7 —— 000191780822
8 —— 000219178082
9 —— 000246575342
10 —— 000273972603, *&c.*

And when thus the Intereſt of one Pound for one Day and any Rate is found, then that *Intereſt*, multiplied by 2, 3, 4, 5, 6, 7, 8, and 9, *&c.* gives the *Intereſt* of any Sum of Money at the ſame Rate.

Take an Example at 3 *l. per Cent.*

Intereſt of 1 *l.* for 1 Day is 00008219178
2 —— 00016438356
3 —— 00024657534
4 —— 00032876712
5 —— 00041095890
6 —— 00049315068
7 —— 00057534246
8 —— 00065753424
9 —— 00073972602

And then it is eaſy to find that the *Intereſt* of 1 *l.* being, as before, .000082, *&c.* that of

10 will be 000822 *
100 —— 008219
1000 —— 082192 *
10000 —— 8.219178 *
100000 —— 82.191781

Becauſe moving the Point of Separation ſtill one Place nearer to the Left-Hand, multiplies any Decimal by 10, 100. 1000, *&c.* as is ſhewn under Decimals. And thus Tables of daily *Intereſt* may be made at pleaſure. The Reaſon of the Stars above ſet to ſome of the Numbers, is to ſhew, that in the Contraction of a Decimal Fraction to fewer Places, it is proper to add one to the laſt Figure retained, when the next Figure to it, which is omitted, exceeded 5.

To finiſh this Account of Intereſt, we ſhall here ſubjoin the ingenious Mr. *Barton's* new and univerſal Method of Simple Intereſt, correctly, conciſely, and eaſily finding the Intereſt of any Sum, for any Number of Days, at any Rate *per Cent.* by one General Rule.

Places 1 2 3 4 5 6 7 8 9 10
RADIX .0000027397 $\frac{1}{365}$ *l.* Sterling.
(*General Rule*) multiply the Principal, Time, Rate, and Radix one into another, and it's done.

EXAMPLE 1.

Intereſt of *l.* 271 for 112 Days at *l.* 3 *per cent. per ann.*

112
20352
3
91056

2.4657
273
13
1
2.494 Anſw. *l.* 2 : 9 : 10 $\frac{1}{2}$

EXAMPLE 2.

Intereſt of *l.* 110 for 71 Days at *l.* 5 *per cent. per ann.*

11
781
5
3905

.8219
.2465
13
1.069 Anſw. *l.* 1 : 1 : 4 $\frac{1}{3}$

EXAMPLE 3.

Intereſt of 5000 *l.* for 60 Days at *l.* 4. *per cent. per ann.*

6
3
4
12

32. 876 Anſw. *l.* 32 : 17 : 6 $\frac{1}{4}$

EXAMPLE 4.

Intereſt of *l.* 800 for 125 Days at *l.* 6 *per cent. per ann.*

8
1
6
6

16.438 Anſw. *l.* 16 : 8 : 9 $\frac{1}{4}$.

Any Annual Sum given, to find what that is *per* Day.

EXAMPLE 5.

l. 164 *per ann.* what is that *per* Day?

.2739
.1643
109
.449 Anſw. *s.* 8 : *d.* 11 $\frac{1}{2}$

EXAMPLE 6.

l. 1000 *per ann.* what is that *per* Day?

2.739 Anſw. *l.* 2 : 14 : 9 $\frac{1}{2}$

EXPLICATION.

In Example 1. the principal Time and Rate multiplied one into another, make 91056, by which I multiply the Radix thus; becauſe 9 is in the * 5th Place, with my Left-hand I hold a Quill's Point in the * 5th Place in the Radix; then I multiply by the ſaid 9, beginning five Figures (more or leſs) to the right of the Quill, and when I come to the fourth Figure, on the right of the Quill, I ſet its Product down, and all the reſt onwards, obſerving when I come to the ſaid 5th Place to make the [.] and the Product is 2.4657: Then I remove the Quill into the fourth Place of the Radix (becauſe 1 ſtands there in the whole Number) and multiply by 1 (ever obſerving punctually the laſt Rule) and the Product is .0273; then 0 in the third place makes nothing, for 5 in the ſecond place (putting the Quill there) the Product is .0013: and for 6 in the firſt Place the Product is .0001: (placing them ever in the Order you ſee) I add them together (never ſetting but three Decimals down) and find their Sum 2.494, and its Value thus.

* Note, *The Places in whole Numbers are reckoned from Right to Left, in Decimals contrary.*

If any thing is to the left of the [.] it's Pounds (*l.* 2) the firſt Figure to the right of the [.] doubled is Shillings (8 *s*): from the ſecond Figure take 5 if you can (if you cannot its whole is Tens) and make the Shillings one more (9): the Remainder (4) in the ſecond place, is Tens, which added to the third (as Units) is Farthings (44 Farthings): for every 20 in that put away 1 (44 Farthings put away 2 is 42 Farthings): the Remainder brought into Pence (10 *d* $\frac{1}{2}$) compleats the Anſwer (*l.* 2. 9. 10 $\frac{1}{2}$.)

Contraction.] A Cypher or Cyphers (having no Figure to the Right) may be cancelled (I have noted them with a Daſh) multiplying the real Figures one into another; but obſerve that the Figures by which you are to multiply the Radix, are to be uſed as if every cancelled Cypher ſtood before them. In Example 2. the 3905 is uſed like and in reality is 39050. In Example 3. five 0's are cancelled, therefore I uſe 12 like 1200000, putting the Quill for the 2 in the 6th Place in the Radix, and, for brevity's-ſake, multiply by 12 ot once.

Any annual Sum given, to find what that is *per* Day; ever imagine two 0's put to the Right of it, then multiply the Radix by it, and it's done.

Remarks.] (1.) If Cyphers be added to the Numerator of the Vulgar Fraction, and that Dividend be divided by the Denominator, the Radix may be increaſed to any Number of Places.

(2.) If the Radix be multiplied by 3, 4, 5, 6, *&c.* it will be a Radix for 3, 4, 5, 6, *&c. per cent.* and ſave the trouble of always multiplying by the Rate.

INTERJECTION, in Grammar, is an Expreſſion uſed to denote ſome ſudden Motion or Paſſion of the Mind; as *oh! ha! &c.* As the greateſt part of the Expreſſions uſed on theſe occaſions, are taken from Nature alone; the real *Interjections* in moſt Languages are Monoſyllables. And as all Nations agree in thoſe natural Paſſions, ſo do they agree in the Signs and Indications of them; as of Love, Mirth, *&c.* Some deny the *Interjections* to be Words, or any part of Speech, and make them mere natural Signs of the Motions or Paſſions of the Mind, expreſs'd by theſe inarticulate Sounds, ſeveral whereof, Brutes have in common with us. But as theſe are Paſſions, and muſt be repreſented in Diſcourſe, the *Interjection* has a good Foundation in Nature, and is a neceſſary Part of Speech. The *Greeks* confound their *Interjections* with Adverbs, and the *Hebrews* confound them with their Adverbs and Prepoſitions, calling them all by the general Name *Particle.*

INTERIM: A Term borrow'd from the *Latin*, ſignifying *in the mean time. Charles* the Vth was the firſt who brought it into uſe, in order to compoſe the Diſturbances of *Germany.* It was a kind of Ordonnance or Regulation to be obſerv'd in the Empire, with regard to the Articles of Religion then controverted, till ſuch time as they ſhould be determin'd by a Council; and was therefore call'd *Interim.* It was ſaid to have been drawn up by two Catholics and a Proteſtant. But as it retain'd moſt of the Doctrines and Ceremonies of the *Romaniſts*, excepting that of Marriage, which was allow'd to Prieſts, and Communion, which was adminiſter'd to the Laity under both Kinds; moſt of the Proteſtants rejected it: thoſe who admitted it, were nick-named *Interimiſts* or *Adiaphoriſts*: Indeed the *Interim* equally diſguſted both Parties, the Proteſtants and Catholics. Beſides this, there were two other

Interims

Interims made; the one call'd the *Interim* of *Leipſic*; the other made by the Divines of *Franconia*, who refuſing to accept the two former, made another for themſelves.

INTERLINEATION, ſomething inſerted between two Lines.

INTERLOCUTORY ORDER, is that which decides not the Cauſe, but only ſettles ſome intervening Matter relating to the Cauſe; as where an Order is made by Motion in Chancery, for the Plaintiff to have an Injunction, to quit his Poſſeſſion till the hearing of the Cauſe: This, or any other ſuch Order, not being final, is *interlocutory*.

INTERLOPE, is to intercept or diſturb the Traffic of a Company; to take up a new Trade or Employment, to the prejudice of thoſe who were brought up in it: And *Interlopers* are properly thoſe, who without due Authority hinder the Trade of a Company or Corporation lawfully eſtabliſh'd, by dealing in the ſame way.

INTERLUCATION, in Husbandry, is a letting in of Light between, by lopping, or cutting away of Boughs.

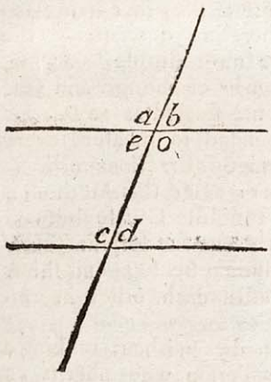
INTERLUDE, an Entertainment exhibited on the Theatre between the Acts of a Play; to amuſe the Spectators while the Actors take breath, and ſhift their Dreſs; or to give time for changing the Scenes and Decorations. Theſe *Interludes* uſually conſiſt of Songs, Dances, Feats of Activity, Conſorts of Muſic, &c. In the antient Tragedy, the Chorus ſung the *Interludes*, to ſhew the Intervals between the Acts. *Ariſtotle* and *Horace* give it for a Rule, that the *Interludes* ſhould conſiſt of Songs built on the principal Parts of the Drama: But ſince the Chorus has been laid down, Dancers, Buffoons, &c. ordinarily furniſh the *Interludes*.

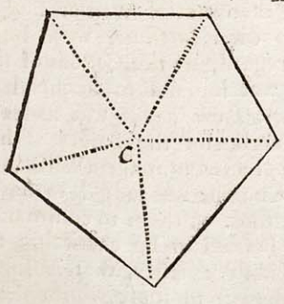
INTERMEDIATE, ſomething betwixt two. It is uſually underſtood of the Space of Time elapſed from any certain Point to any other.

INTERMEWING, in Falconry, is an Hawk's *Mewing* from the firſt Change of her Coat till ſhe turn white.

INTERMITTENT ſignifies a Ceſſation of any particular Action for ſome time, and that Time is called the *Interval*: Thus Fevers which go off, and ſoon return again, as alſo any other Diſtempers, are called *Intermittents*, in oppoſition to thoſe which are always continued; and a Pulſe which after ſo many Strokes, ſtops, or loſes one in its due time, is call'd an intermitting Pulſe. With regard to this it has been obſerved, that as often as the Ventricle is much inflated with Wind, the *Nervus* or *Plexus Cardiacus* at its Orifice muſt ſuffer a Contraction, which being continued to the Heart, will occaſion a Twitching; and this, as it is more or leſs violent, will produce a ſimple Intermiſſion of Pulſe, or a real Palpitation of the Heart.

INTERNAL ANGLES, are all *Angles* made by the Sides of any right-lin'd Figure within: alſo the two *Angles* between the parallel Lines on each ſide the croſſing Line, as *o* and *d*, *e* and *c* in the Figure are call'd the two *internal Angles*, and are always equal to two right ones. The *Angles c* and *d* are alſo called *internal* and oppoſite *Angles* in reſpect of *a* and *b*. The Sum of all the *internal Angles* of any right-lin'd Figure, is equal to twice as many right *Angles* as the Figure hath Sides, except 4. For ſince every ſuch Figure from a Point taken within it, can be divided into as many Triangles as it hath Sides, and ſince the Sum of the *Angles* of each Triangle is equal to 2 right *Angles* (32, *Prop.* 1. *Eucl.*) that will make twice as many *Angles* as the Figure hath Sides; from which Sum take away all thoſe *Angles* about the Point *c*, which (by 13. *Prop.* 1. *Eucl.*) are equal to 4 right *Angles*; wherefore the remaining Sum of all the *internal Angles* is equal to twice as many right *Angles*, as the Figure hath Sides, except 4.





INTERNODII, in Botany, are thoſe little Spaces contained between any two Knots or Joints of the Stalk of a Plant; and in Anatomy, the *Extenſores Pollicis*, which ſee, are alſo ſo called.

INTEROSSEI MANUS, are the Muſcles which move the Fingers, thus called from their Situation, as being contained between the Spaces of the Bones of the *Metacarpus*: Some reckon ſix of them, and others eight; the one half lie between the Spaces theſe Bones leave towards the Palm of the Hand, and they are called the internal *Interoſſei*, ariſing from the upper part of the Bones of the *Metacarpus* next the *Carpus*; and being inſerted on the internal Sides of the firſt Bones of the Fingers with the *Lumbricales*, they are the *Adductores Digitorum*, for they bring the Fingers to the Thumb. The other half are contained in the Spaces that the Bones of the *Metacarpus* leave on the Back of the Hand; they riſe from the upper Part of the Bones of the *Metacarpus*, next the *Carpus*, and are inſerted on the external Sides of the firſt Bones of the Fingers; and theſe are the *Adductores Digitorum*, for they draw the Fingers from the Thumb.

Interoſſei Pedis, the Muſcles which move the Toes; in Number, Uſe, Origin, and Inſertion, they anſwer exactly to thoſe of the Hand. See *Interoſſei Manus*.

INTERPOLATION, a Term uſed by the Critics in ſpeaking of antient Writings and Manuſcripts, to which ſome ſpurious Additions or Alterations have been ſince made. For the aſcertaining an *Interpolation*, *P. Ruinart* gives us the five following Rules. 1. That the Piece ſuppoſed to be interpolated appear to have all the Antiquity it pretends to. 2. That there be good Proofs that it has been interpolated. 3. That the ſuppoſed *Interpolations* agree to the Time of the Interpolator. 4. That the *Interpolations* don't touch the Foundation of the Work, be not too frequent, nor entirely diſfigure the Piece. 5. That the Reſtitution made, agree perfectly to the reſt of the Work.

INTERPOSITION, the Situation of a Body between two others hiding them, or preventing their Action. Thus the Eclipſe of the Sun is occaſion'd by an *Interpoſition* of the Moon between the Sun and us; and that of the Moon by the *Interpoſition* of the Earth between the Sun and Moon.

INTERPRETER, a Perſon who explains the Thoughts, Words, or Writings of ſome others, which before were unintelligible. The word *Interpres*, according to *Iſidore*, is compoſed of the Prepoſition *inter* and *partes*, as ſignifying a Perſon in the middle betwixt two Parties, to make them mutually underſtand each other's Thoughts. Others derive it from *inter* and *præs*, i. e. *Fidejuſſor*, a Perſon who cautions another.

There have been great Debates about interpreting the Scripture: The *Romaniſts* contend, that it belongs abſolutely to the Church, adding, that where ſhe is ſilent, Reaſon may be conſulted; but where ſhe ſpeaks, Reaſon is to be diſregarded. The Proteſtants generally allow Reaſon the Sovereign Judge in the Caſe; tho ſome among them have a ſtrong regard to Synods and others to the Authority of the Primitive Fathers. Laſtly, others have recourſe to the Spirit within every Perſon to interpret for them. Which is what *Bochart* calls ἀπόδειξις τοῦ πνεύματος.

INTERREGNUM, the Time during which a Throne is vacant, or a Kingdom without a Head. In Hereditary Kingdoms there are no *Interregnums*, at leaſt they are very rare. In Elective Kingdoms, the *Interregnums* are extremely liable to Factions and Diſorders. In *Germany*, the Emperors have loſt the greateſt part of their Dominions during the *Interregnums*.

INTERREX, a Magiſtrate who governs during an *Interregnum*, or in the Interval between the Death of a Monarch, and the Election or Inauguration of his Succeſſor. This Magiſtrature was eſtabliſh'd in old *Rome*, and was almoſt as antient as the City itſelf. After the Death of *Romulus* there was an *Interregnum* of a Year, during which the Senators were each *Interrex* in their turn, five Days a-piece. After the Eſtabliſhment of Conſuls and a Commonwealth, tho there were no Kings, yet the Name and Function of *Interrex* was ſtill preſerved. For when the Magiſtrates were abſent, or there was any Irregularity in their Election, or they had abdicated, ſo that the *Comitia* could not be held, provided they were unwilling to create a Dictator, they made an *Interrex*, whoſe Office and Authority was to laſt five Days; after which they made another. To the *Interrex* was delegated all the Regal and Conſular Authority, and he perform'd all their Functions. He aſſembled the Senate, held *Comitia* or Courts, took care the Election of Magiſtrates was according to the Rules. Indeed, at firſt it was not the Cuſtom for the *Interrex* to hold *Comitia*; at leaſt we have no Inſtance of it in the antient *Roman* Hiſtory. The *Patricii* alone had the Right of electing an *Interrex*. This Office fell with the Republic, when the Emperors made themſelves Maſters of every thing.

INTERROGATE, a Judiciary Act, performed by a Judge or Commiſſioner deputed to examine or queſtion a Party; who firſt gives his Oath that he will anſwer truly to every thing he is *interrogated*.

INTERROGATION is a Figure in Rhetoric, in which the Paſſion of the Speaker introduceth a thing by way of Queſtion, to make its Truth more conſpicuous. It is a kind of Apoſtrophe which the Speaker

makes to himself; and it must be own'd, that this Figure adds an uncommon Briskness, Action and Force to Discourse.

Interrogation, in Grammar, is a Point which serves to distinguish such Parts of a Discourse, where the Author speaks as if he were asking Questions. Its Form is this ?

INTERRUPTION, is the same with Disjunction of Proportion in Geometry, it is noted thus (: :) and signifieth the breaking off of the Ratio in the middle of four disjunct or discrete Proportionals, as A : B :: C : D; that is, as A is to B so is C to D.

Interruption is also a Figure in Rhetoric, wherein a Person breaks off his Discourse suddenly, to shew some Passion.

INTERSECTION, in Mathematics, signifies the Point or Line wherein two Lines or two Planes cut each other. Thus we say, that the mutual *Intersection* of two Planes is a Right Line. The Centre of a Circle is in the *Intersection* of two Diameters. The Central Point of a regular or irregular Figure of four Sides is the Point of *Intersection* of the two Diagonals. The Equinox happens when the Sun is in the *Intersection* of the Equator and Ecliptic.

INTERSOILING, in Husbandry, is laying one kind of Soil or Mould upon another; as Clay on Sand, Sand on Earth, &c.

INTERSPINALES COLLI, the Name of five Pair of small Muscles discover'd by Mr. *Cowper*; and by him so call'd from their Position. They arise from each double Process of the Spine of the Neck, and run from the upper one to the next below, into which they are inserted. They serve to approximate and draw together the *Vertebræ* of the Neck, and are more especially proper to this Part, as having both Origin and Insertion in it.

INTERSTELLAR, is a Word used by some Authors to express those Parts of the Universe that are without and beyond our Solar System; in which are supposed to be several other Systems of Planets moving round the fixed Stars as the Centers of their respective Motions: And if it be true, as it is not improbable, That each fixed Star is thus a Sun to some habitable Orbs, that move round it, the *Interstellar* World will be infinitely the greater part of the Universe.

INTERTIES, or INTERDUCES, in Architecture, are those small Pieces of Timber that lie horizontally betwixt the Summers, or betwixt them and the Sell or Reson.

INTERTRANSVERSALES COLLI: Certain Muscles between the transverse Processes of the *Vertebræ* of the Neck, of the same Size and Figure with the *Interspinales*, and observed by the same Author. See *Philosoph. Transact. vol.* 21. *p.* 132.

INTERVAL, the Distance or Space between two Extremes, either of Time or Place. The Word comes from the *Latin Intervallum*, which, according to *Isidore*, signifies the Space *inter Fossam & Murum*, between the Ditch and the Wall. Others say, that the Stakes or Piles, driven into the Ground in the antient *Roman* Bulwarks, were called *Valla*, and the Interstices or Vacancy between them *Inter-valla*.

INTERVAL, in Music, is the Difference between two Sounds in respect of Acute and Grave, or that imaginary Space terminated by two Sounds differing in Acuteness or Gravity. When two or more Sounds are compared in this Relation, they are either equal or unequal in the Degree of Tune. Such as are equal are call'd *Unisons*, with regard to each other, as having one Tune; the other being at a distance from each other, constitute what we call an *Interval* in Music, which is properly the Distance in Tune between two Sounds. *Intervals* are distinguish'd into Simple and Compound. A simple *Interval* is without Parts or Division, a Compound consists of several lesser *Intervals*. But this Distinction regards Practice only, because there is really no such thing as a least *Interval*. Besides, by a simple *Interval* is not meant here the least practised, but such as tho it were equal to two or more lesser which are in use, yet when we would make a Sound move so far up or down, we always pass immediately from one of its Terms to the other. What is meant then by a compound *Interval*, will be very plain: It is such, whose Terms are in Practice taken either in immediate Succession, or such where the Sound is made to rise and fall from the one to the other, by touching some intermediate Degrees; so that the whole becomes a Composition of all the *Intervals* from one Extreme to the other. What we here call a simple *Interval*, the Antients call'd a *Diastem*, and the Compound they call'd a *System*. Each of these has Differences; even of the Simple there are some greater, and others less: but they are always Discord; but of the Compound or System, some are Concord, others Discord. *Unisons*, 'tis plain, cannot possibly have any Variety; for where there is no difference, as in Unisonance, which flows from a Relation of Equality, 'tis plain there can be no Distinction: Unisons therefore must all be Concords. But an *Interval* depending on a Difference of Tune, or a Relation of Inequality, admits of Variety; and so the Terms of every *Interval*, according to their particular Relation or Difference, make either Concord or Discord. Some indeed have restrained the word *Concord* to *Intervals*, making it include a Difference in Tune, but this is precarious; for as the word *Concord* signifies an Agreement of Sounds, 'tis certainly applicable to Unisons in the first Degree: *Intervals*, 'tis plain, may differ in Magnitude, and there may be an infinite Variety according to the possible Degrees of Tune; for there is no Difference so great or little, but a greater or a less may possibly be conceived. 'Tis true, with regard to Practice, there are Limits which are the greatest and least *Intervals* our Ears are Judges of, and which may be actually produced by Voice or Instrument.

The Degrees of Tune are proportional to the Numbers of Vibrations of the sonorous Body in a given Time, or the Velocity of their Courses and Recourses. Now these Differences in Tune constitute, as has been already said, the *Intervals* in Music; these therefore must be greater or less, as the Differences are; and 'tis the Quantity of these, which is the Subject of the Mathematical Part of Music. Those *Intervals* are measured not in the simple Differences or Arithmetical Ratio's of the Numbers expressing the Lengths or Vibrations, but in their Geometric Ratio's; so that the same *Interval* depends on the same Geometrical Ratio, and *vice versâ*. It is however to be observed, that in comparing the Equality of *Intervals*, the Ratio's expressing them must be all of one Species; otherwise this Absurdity will follow, that the same two Sounds may make different *Intervals*. To describe the particular Methods of measuring the Inequality of *Intervals*, would be too tedious: this one Rule may be observed, that, to determine in general, which of two or more *Intervals* are the greatest, take all the Ratio's as proper Fractions, and the least Fraction will be the greatest *Interval*.

The Antients were extremely divided about the measuring of *Intervals*. *Pythagoras* and his Followers measur'd them by the Ratio's of Numbers. They supposed the Differences of Gravity and Acuteness to depend on the different Velocities of the Motion that causes Sound; and thought, therefore, that they could only be accurately measured by the Ratio's of those Velocities. Which Ratio's were first investigated by *Pythagoras*, on occasion of his passing by a Smith's Shop, and observing a Concord betwixt the Sounds of Hammers striking on the Anvil. *Aristoxenus* opposed this. He thought Reason and Mathematics had nothing to do in the case, and that Sense was the only Judge in the Dispute; the other being too subtile to be of any use. He therefore determined the 8ve, 5th, and 4th, which are the most simple Concords, by the Ear; and by the Difference of the 4th and 5th, he found out the Tone: which once settled as an *Interval* the Ear could judge of, he pretended to measure every *Interval* by various Additions and Substractions made of these mentioned one with another: But this Method is very inaccurate. *Ptolemy* keeps a middle Course betwixt the two. He finds fault with the one for despising Reason, and with the other for excluding Sense; and shews how these two may mutually assist each other in this Matter. See *Tone*, &c.

INTESTATE, a Person who dies without making a Will. An Heir *ab Intestato*, is a Person who inherits an Estate by some other Right, than that of Will or Testament. Heretofore, those who died *Intestate*, were held infamous, and accursed; in regard, by the Canons of several Councils, every Person was injoin'd to bequeath a part of his Estate (and *Matthew Paris* says it was at least to be a tenth part) to the Church, for the Safety of his Soul; which, a Person who neglected to make a Will, and to leave this Legacy to the Church, was judg'd to have abandon'd. Several Councils took on them to command the Priests to sollicite dying Persons to be charitable to the Church; and this they did so earnestly, that Absolution and the Viaticum were denied to those whom they could not prevail on; so that they made no difference between these *Intestates* and Self-Murderers: and they were alike denied Christian Burial. *Du Cange* adds, that all who died without Absolution, without receiving the Viaticum, and without leaving Alms to the Church (even tho they died suddenly) had their Effects seiz'd and confiscated to the Use of the Church, the Bishop, &c.

In our *English* Law there are two kinds of *Intestates*; the one *de facto*, which are those who make no Will at all, the other *de jure*, which are those who make a Will; but it is null and void, either from the Executors refusing to act, or from some other Cause in which he is judg'd to die *intestate*.

INTESTINE MOTION, *of the Parts of Fluids.* Where the attracting Corpuſcles of any Fluid are elaſtick, they muſt neceſſarily produce an *Inteſtine Motion*; that is, a viſible Motion or Change of Place among the minute Parts of a fluid Body: and this greater or leſs according to the Degrees of their Elaſticity, and attractive Forces. For two elaſtic Particles after meeting will fly from one another (abſtracting the Reſiſtance of the Medium) with the ſame degree of Velocity, with which they met: But when in flying back from one another, they approach other Particles, their Velocity will be increaſed. See *Elaſticity* and *Fermentation.*

INTESTINES, in Anatomy, are the ſame with what we ordinarily call the Guts or Bowels. Theſe ſeem to be nothing but a Continuation of the Stomach, conſiſting of the ſame Number of Coats, and fabricated in the ſame manner; they are protended with various Circumvolutions and Inflexions to the *Anus*, thro' which they diſcharge the excrementitious part of their Contents out of the Body. They are, when ſeparated from the Meſentery, to which they are all along connected, of a very great Length, ordinarily about ſix times as long as the Perſons whoſe they were. And tho they ſeem to be but one continued Channel or Fiſtula, yet becauſe in ſeveral Parts their Magnitude, Figure, and Thickneſs are different, they are in general divided into the thick and thin, and theſe again are each of them ſubdivided into three; the three thin are called *Duodenum*, *Jejunum*, and *Ileum*; and the thick *Cæcum*, *Colon*, and *Rectum*. They have all of them in common a kind of Vermicular Motion, which, beginning at the Stomach, is propagated downwards, and is called the *Periſtaltic Motion*. To facilitate that, they are generally lubricated with a great deal of fat, eſpecially the thick ones, whoſe Surface being ſomewhat more uneven, and the Contents leſs fluid than thoſe of the thin, they need ſomewhat more to make them ſlide eaſy.

The firſt of the thin Guts is called *Duodenum*, and reaches from the right Orifice of the Stomach, as far as the *Vertebræ* of the Back on the left Side, where, at the firſt Angle made by the *Inteſtines* it ends, which is about 12 Inches, from which Meaſure it ſeems to have taken its Name. This Meaſure however is far from being very exact, as being much too largely computed. Into this Gut the Gall-Duct and Pancreatic-Duct empty themſelves, and their ſeveral Liquors mix with the Chyle. The next *Inteſtine* is the *Jejunum*, ſo called, becauſe it is generally found more empty than the reſt; which may be occaſioned partly by the Fluidity of the Chyle, which is greater in this *Inteſtine* than in any of thoſe that follow it; and partly by its Capacity, being ſomewhat larger than that of the *Duodenum*, and therefore it gives a freer Paſſage, and perhaps alſo the Irritation of this Gut thro' the Acrimony of the Bile, which is diſcharged upon the *Inteſtines* a little before the beginning of this Gut, may contribute ſomething towards accelerating the Paſſage of the Contents. However, it may ſeem ſufficient, that thro' the great Number of Lacteals, with which this Gut abounds more than any other, the Deſcent of the Contents, which are here deprived of the moſt fluid Parts, ſhould in the reſt be more ſluggiſh, by reaſon of their greater Conſiſtence. This *Inteſtine* is allowed to poſſeſs almoſt the whole Umbilical Region, and its Length is generally computed to be about twelve or thirteen Hands breadth. The *Ileum*, which is the third *Inteſtine*, is ſituated below the Navel, and fills the *Ilia* with its numerous Folds and Convolutions. It is the longeſt of all the *Inteſtines*, being eſteemed to be one and twenty Hands long: But theſe Eſtimates are ſomewhat arbitrary, becauſe it is not exactly ſettled among Anatomiſts, where the *Jejunum* ends, or the *Ileum* begins; neither is it eaſy or neceſſary to do it. In both this and the preceding *Inteſtine*, the Inner Tunic is much corrugated, the looſe Folds of which have been thought to do in ſome meaſure the Office of Valves, and have therefore by Authors been called *Valvulæ Conniventes*; which are framed, as in the Stomach, only by the inner Coat being larger than the outward.

Next follow the thick *Inteſtines*, the firſt of which is called the *Cæcum*, which has a lateral Inſertion into the upper end of the *Colon*, and is not perforated at its other Extremity, but hangs to it like the Finger of a Glove, and is about three or four Inches long. The true Uſe of this part is not yet determined, and ſome late Anatomiſts have thought that the Name likewiſe is miſtaken, not allowing this to be the *Cæcum* of the Antients, which they imagined to be that thick globous part of the *Colon*, which is immediately appended to the *Ileum*, and therefore they have given this part the Name of *Appendicula Vermiformis*. This *Cæcum*, or Appendix, is proportionably bigger in Infants than Adults, and in many other Animals even ſmaller than in Men, and is, at the unperforated Extremity, ſlightly connected to the right Kidney. The next of the thick *Inteſtines* is the *Colon*, which is much the largeſt, and moſt capacious of them all. It begins with the *Cæcum*, and is with that connected to the right Kidney. Thence with a winding Courſe it proceeds towards the Liver, where it is ſometimes tied to the Gall-Bladder, and by that tinged with yellow. From the Liver it runs a-croſs under the Bottom of the Stomach, where it is by very fine thin Membranes faſtned to the Spleen, and marches over the left Kidney, where its Cavity is ſometimes very much ſtreightned, and deſcending ſo to the bottom of the *Os Ileum*, and from thence returning to the upper part of the *Os Sacrum*, and there making the Figure of a Circumflex, it ends in the *Rectum*. At the Entrance of the *Ileum* into this Gut is placed a *Valve*, formed out of the Production of the inward Coat of the *Ileum*, which, like the Finger of a Glove, when its Extremity is cut off, hangs looſe in the Cavity of the *Colon*, by which means it ſtops the return of the Excrements, tho' ſometimes, as in Inverſions of the Periſtaltic Motion, it proves not ſufficient for that Uſe. It has a great many *Cellulæ*, or, as it were, diſtinct Cavities, framed by a Coarctation of the Gut by two Ligaments, or Bundles of membranous fleſhy Fibres, about half a Finger broad, each running on either ſide the Gut oppoſite to each other, the whole Length of it, and as it were girting it in at certain Diſtances, thereby making it reſemble a Glaſs Incorporator, uſed in mixing Oil and Vinegar. The next and laſt of the *Inteſtines* is the *Rectum*, which reaches from the *Os Sacrum* to the *Anus*, and is plain without Cells. It is faſt tied to the *Oſſa Sacrum* and *Coccygis*, by means of the *Peritonæum*, and in Men to the Neck of the Bladder of Urine, in Women to the *Vagina Uteri*, to which it is ſtrongly connected by a membranous Subſtance. That Subſtance of the *Vagina* and *Inteſtine* are hardly diſtinguiſhable from one another. The Length of this Gut is ordinarily about a hand's Breadth and an half, and its Capacity about the Thickneſs of three Fingers; its lower end, the *Anus*, is furniſhed with three Muſcles, *viz.* the *Sphincter Ani*, and *Levatores Ani*; which ſee.

There are alſo in the *Inteſtines*, a great Number of *Glands*, which, in the *Inteſtina Tenuia*, are gathered together in Heaps, as it were like Bunches of Grapes. In theſe *Inteſtines* they are very ſmall, and were it not for their Coacervations, ſcarce remarkable. But in the *Inteſtina Craſſa* they are much larger, not gathered like the others, but diſperſed; and, tho' very numerous, come under the Denomination of *Solitary Glands*. Theſe Glands diſcharge a Liquor into the *Inteſtines*, whether ordinarily for any thing more than the Lubrication of the *Inteſtines*, and diluting their Contents, is not certain; tho' thro' theſe ſeems the greateſt part of the Diſcharge to be made, which, either upon extraordinary Fluxes, or upon the Adminiſtration of Cathartics, we have frequent Occaſion to obſerve. Theſe *Inteſtines*, in general, are furniſhed with Blood from the Meſenteric Arteries, which is returned by the Meſeraic Veins: But the *Duodenum* receives a Branch of an Artery from the *Cæliac*, which is called *Duodena*, to which anſwers a Vein of the ſame Name, that likewiſe returns the Blood to the *Porta*; the *Rectum* receives others, which are called *Hemorrhoids*; the internal from the inferior Meſenteric, and the external from the Hypogaſtric, with Veins correſponding of the ſame Name, that alſo go to the *Porta*. Theſe Veſſels ſpread the *Inteſtines* with abundance of Ramifications, and are frequently diverſified in ſeveral Subjects of the ſame Species; much leſs are they to be depended upon for an uniform Appearance in Animals of different kind. The *Nerves* of the *Inteſtines* come ſome of them from thoſe of the Stomach, and ſome from the great Meſenteric Plexus, which diſtributes Branches to all the *Inteſtines*. The remaining Veſſels of the *Inteſtines* are the *Lymphæducts*, and *Venæ Lacteæ*, which ſee.

INTRIGUE, an Aſſemblage of Events or Circumſtances occurring in an Affair, and perplexing the Perſons concerned in it. *Tripaud* tells us the word is properly underſtood of Chickens, that have their Feet intangled in Hair, and is derived from the *Greek* ἐν and δελεξ.

In this ſenſe *Intrigue* is uſed to ſignify the Nodus, or Plot of a Play or Romance, or that Point wherein the principal Characters are the moſt embaraſſed, through the Artifice and Oppoſition of certain Perſons, or the unfortunate falling out of certain Accidents and Circumſtances. In a Tragedy, Comedy, or Epic Poem, there are always two Deſigns; the firſt and principal is that of the Hero of the Piece; the ſecond contains the Deſigns of all thoſe who oppoſe him. Theſe oppoſite Cauſes produce oppoſite Effects, to wit, the Efforts of the Hero for the Execution of his Deſign, and the Efforts of thoſe who thwart it. As thoſe Cauſes and Deſigns are the beginning of the Action, ſo thoſe Efforts are the middle, and form a Knot or Difficulty, which we call an *Intrigue*, that makes the greateſt part of the Poem. It laſts as long as the Mind of the Reader or Hearer is ſuſpended about the Event of thoſe oppo-

site Efforts; the Solution or Cataſtrophe commences when the Knot begins to unravel, and the Difficulties and Doubts begin to clear up. The *Intrigue* of the Iliad is twofold; the firſt comprehends the three Days fighting in *Achilles*'s Abſence, and conſiſts, on the one ſide, in the Reſiſtance of *Agamemnon* and the *Greeks*, and on the other in the inexorable Temper of *Achilles*. The Death of *Patroclus* unravels this *Intrigue*, and makes the beginning of a ſecond. *Achilles* reſolves to be revenged, but *Hector* oppoſes his Deſign, and this forms the ſecond *Intrigue*, which is the laſt Day's Battel. In the Æneid there are alſo two *Intrigues*; the firſt is taken up in the Voyage and Landing of *Æneas* in *Italy*, the ſecond in his Eſtabliſhment there. The Oppoſition he met with from *Juno*, in both thoſe Undertakings, forms the *Intrigue*. As to the Choice of the *Intrigue*, and the Manner of unravelling it, 'tis certain they ought both to ſpring naturally from the Ground and Subject of the Poem. *Boſſu* gives us three Manners of forming the *Intrigue* of a Poem; the firſt is that already mentioned; the ſecond is taken from the Fable and the Deſign of the Poet; in the third the *Intrigue* is ſo laid, as that the Solution follows from it of courſe. See *Cataſtrophe*.

INTRINSIC, a Term applied to the inner, real, genuine Values, Properties, &c. of any thing, in oppoſition to their extrinſic, apparent, or popular Values, &c.

INTRONATI, the Name of an Academy at *Sienna* in *Italy*. The Members of this Academy contented themſelves, at their firſt Inſtitution, with eſtabliſhing the following ſix ſhort Laws: (1.) To pray. (2.) To ſtudy. (3.) To be merry. (4.) To offend no body. (5.) Not to credit too lightly. (6.) To let the World talk.

INTRUSION, in the Canon Law, ſignifies the Enjoyment of a Benefice, or the Exerciſe of an Office, without a good Title to it. *Intruſion* diſqualifies the Party from ever holding the Benefice. The word is derived from the *Latin* Verb *intrudere*, *to thruſt in*, or *enter by Force*.

INVALID, a Perſon wounded, maimed, or diſabled for Action by Age. At *Chelſea* and *Greenwich* are magnificent Hoſpitals, or rather Colleges, built for the Reception and Accommodation of *Invalids*, or Soldiers wore out and diſabled in the Service. At *Paris* is a College of the ſame kind, called *les Invalides*, which is accounted one of the fineſt Buildings in that City.

INVECTED, in Heraldry, ſignifies the juſt Reverſe of *Engrail'd*; which ſee.

INVENTION, a Subtilty of Mind, or ſomewhat peculiar in a Man's Genius, which leads him to the Diſcovery of things that are new.

Invention, in Rhetoric, ſignifies the finding out, and the Choice of Arguments which the Orator is to uſe for the proving of his Point, or the moving of his Hearers Paſſions. *Invention*, according to *Cicero*, is the principal Part of Oratory. He wrote four Books *de Inventione*, whereof we have but two remaining. This *Invention* of the Orators cannot, according to my Lord *Bacon*, be properly called *Invention*; to *invent* is to diſcover things not yet known, not to recollect thoſe that are; whereas the Uſe and Office of this Rhetorical *Invention* is only out of the Stock of Knowledge laid up in the Mind, to ſelect ſuch Articles as make for the purpoſe. The ſame Author divides this Faculty of *Invention* into two Parts, the one topical, the other promptuary; the firſt points out the way in which we are to purſue the Argument, the latter only lays up and diſpoſes things, for which we have frequent occaſion in the Mind.

Invention, in Poetry, is underſtood of every thing, that the Poet adds to the Hiſtory of the Subject he has choſen, and of the Turn that he gives it.

Invention, in Painting, is the Choice which the Painter makes of the Ojects that are to enter the Compoſition of his Piece. *Du Pile* obſerves, that *Invention* is different from Diſpoſition, and that 'tis thoſe two things together that form Compoſition: For after having made a good Choice of Objects proper for the Subject, they may be ill-diſpoſed; and then tho' the *Invention* be never ſo good, the Diſpoſition or Ordonnance will be faulty, and the Piece will diſpleaſe. Of all the Parts of Painting, *Invention*, doubtleſs, is that which gives the Painter the faireſt Occaſions of ſhewing his Genius, his Imagination, and good Senſe. M. *Felibien* gives the general Name *Invention* to every thing that depends on the Genius of the Painter, as the Ordonnance, the Diſpoſition of the Subject, and even the Subject itſelf, when it is new. But the Term *Invention*, taken in this Senſe, is no Term peculiar to Painting, but agrees alſo to other Arts. In another place M. *Felibien* diſtinguiſhes *Invention* into two kinds; to wit, that which ariſes immediately from the Mind of the Painter, and that which he borrows from ſome other. The firſt is, when he invents the Subject himſelf, and the ſecond when he borrows it from Hiſtory, Fable, &c. but he always affixes the ſame Idea to *Invention*.

Janſon d'Almeloveen has written an Onomaſticon of *Inventions*, wherein are ſhewn, in an Alphabetical Order, the Names of the Inventors, and the Time, Place, &c. where they were made. *Pancirollus* has written a Treatiſe of old *Inventions* that are loſt, and new ones that have been made: *Polydore Virgil* has alſo publiſhed ſix Books of the *Inventions* of Things.

INVENTORY, in Law, is a Catalogue or Repertory orderly made of all a dead Man's Goods and Chattels, prized by four or more credible Men, which every Executor or Adminiſtrator is obliged to exhibit to the Ordinary at ſuch time as he ſhall appoint. The Uſe of the *Inventory* is borrow'd from the Civil Law, for whereas by the Law of the antient *Romans*, the Heir was obliged to anſwer all the Teſtator's Debts; by which means, Heritage ſometimes became rather prejudicial than profitable: To obviate this Inconvenience, *Juſtinian* ordained, That if the Heir would firſt exhibit a true *Inventory* of all the Teſtator's Effects, he ſhould be no farther charged than to the Value of the *Inventory*.

Inventory, in Trade, is a Liſt or particular Valuation of Goods, &c.

INVERSE is underſtood of a manner of working the Rule of Three, or of Proportion, that ſeems to be inverted, or to go backwards. In the Rule of Three direct the firſt Term is to the ſecond, as the third is to the fourth; that is, if the ſecond be greater than the third, or leſs than the firſt, in any Proportion, the fourth is leſs than the third in the ſame Proportion. But in the *Inverſe* Rule, the fourth Term is as much greater than the third, as the ſecond is leſs than the firſt. In the *inverſe* Rule, therefore, the Proportion is not, as the firſt is to the ſecond, ſo is the third to the fourth; but as the fourth is to the firſt, ſo is the ſecond to the third. For inſtance, in the Direct Rule we ſay, If three Yards of Tapeſtry coſt twenty Pound, how many will ſix coſt? The Anſwer is forty. In the *Inverſe* Rule we ſay, If twenty Workmen make ten Yards in four Days, in how many Days will forty do it? The Anſwer is in two Days.

INVERSE PROPORTION. See *Proportion*.

INVERSION, an Action, by which any thing is inverted, or turned backwards. Problems in Geometry and Arithmetic are often proved by *Inverſion*, or making a contrary Rule or Demonſtration.

INVERSION, in Grammar, is where the Words of a Phraſe are ranged in a manner, not ſo natural as they might be; for inſtance, Of all Vices the moſt abominable, and that which leaſt becomes a Man, is Impurity. Here's an *Inverſion*; the natural Order is this, The moſt abominable of all Vices, and that which leaſt becomes a Man, is Impurity. An *Inverſion* is not always diſagreeable, but ſometimes has a good Effect, and is uſed with Deſign.

INVEST ſignifies to confer on any one the Title of a Fee, Dignity or Office, or to ratify and confirm what has been obtained elſewhere. The Emperor pretends to a Right of inveſting ſeveral Princes both in *Germany* and *Italy*. There was formerly a particular Ceremony for the inveſting of Biſhops.

Inveſt, in the military Art, ſignifies the opening of the Siege of a Place, and the incamping an Army round it to block up all its Avenues, and to prevent all Ingreſs and Egreſs. 'Tis the Cavalry that always begin to *inveſt* a Place. The word comes from the *Latin in* and *veſtire*, *to clothe*.

Inveſt, in Law, ſignifies to put in poſſeſſion. A Tenant is *inveſted* by giving him a Verge or Rod into his Hands, and adminiſtring an Oath, which is call'd *Inveſting*. Others define it thus, *Inveſtire eſt in ſuum Jus aliquem introducere*, to give Livery of Seiſin or Poſſeſſion. See *Inveſtiture*.

INVESTIGATION properly ſignifies the ſearching or finding any thing out by the Tracks or Prints of the Feet. Hence the Mathematicians and Schoolmen, &c. came to uſe the Term in their reſpective Reſearches. *Inveſtigation* of a Theme is the Art, Method, or Manner of finding the Themes in Verbs, that is, the primitive Tenſe, Mode, and Perſon of any Verb, far removed from its Source. To underſtand a *Greek* Author, 'tis abſolutely neceſſary to be well acquainted with the Method of inveſtigating a Theme. This Theme, in the *Greek* Tongue, is the preſent Tenſe of the Indicative Mood. *Clenard* was the firſt who introduced this Term into Grammar; he gives the Title *Inveſtigatio Thematis*, to that part where he teaches the manner of finding whence any Perſon or Tenſe of a Verb proceeds, and of reducing it to its primitive Diction, or of finding its Indicative.

INVESTITURE is uſed both for the Right of inveſting any one, and the Act of inveſting him. This conſiſts in receiving the Faith and Homage, by which the Vaſſal becomes ſeized and poſſeſſed of a Fee by his Lord. *Inveſtiture* was antiently performed by a Form of Words, afterwards by the Delivery of ſuch things as had the neareſt

Reſem-

Reſemblance to what was transferred. Thus Land paſſed by the Delivery of a Turf, and to ſhew the Trees were transferred at the ſame time, a Bough was cut, and delivered along with it. But in After-times the things by which *Inveſtitures* were made, were not ſo ſtrictly obſerved. Many were inveſted by the Delivery of a Staff, a Glove, a Knife, a Piece of a Cloak, of a Strap, and a Girdle, by pricking the Thumb, by giving the Keys, a Spit, a Blow, a Ring, a Turf, a Bough, a Straw, &c. The *Inveſtiture* of a Kingdom, or Lordſhip, was performed by a Standard, a Banner, a Cap, a Sword, a Bow, Arrows, Spurs, &c. The Symbols were ſometimes preſerved in the Repoſitories of the Houſes, and were annexed to the Titles.

Inveſtiture was alſo uſed with regard to ſpiritual Benefices. This was frequently performed by delivering the Croſier and Paſtoral Ring. The Kings of *England* and *France*, the Emperors of *Germany*, &c. had formerly this Right: ſo that on the Death of a Prelate, his Clergy ſent the Croſier, &c. to their Sovereign, to be uſed at the Ceremony of inveſting his Succeſſor. The firſt who diſputed this Privilege with them, was *Gregory* VI. *Gregory* VII. did it to ſome purpoſe; he excommunicated the Emperor *Henry* IV. and forbad all Eccleſiaſtics, under pain of Excommunication, to receive the *Inveſtiture* at the hands of Secular Princes. *Paſchal* II. however, was obliged to confirm *Henry* V. in the Right of giving *Inveſtitures*; but repenting what he had done, he excommunicated him, and reduced him to a Neceſſity of begging Abſolution. At length that Emperor was obliged, by Pope *Gelaſus* II. ſolemnly to renounce all *Inveſtitures* and Elections. In antient Authors we meet with eighty different Forms of *Inveſtiture*.

INVOCATION, an Action by which we adore God, and call on him for his Aſſiſtance. The *Romaniſts* alſo practiſe *Invocation* of Saints, begging them to intercede with God in their behalf. This is one of the grand Articles of Diſpute between the *Romaniſts* and the *Reformed*.

Invocation, in Poetry, is an Addreſs which the Poet makes at the beginning of his Work, wherein he calls for the Aſſiſtance of ſome God, particularly of his Muſe, or the Divinity of Poetry. This part is abſolutely neceſſary in an Epic Poem, in regard the Poet relates things which he could not be ſuppoſed to know, unleſs ſome Deity inſpired him. Beſides, this ſerves his Readers as an Example of Piety and Devotion, which is the Foundation of his whole Work. To theſe it may be added, that the Gods themſelves are to have a part in the Action, and 'tis not decent he ſhould ſet them to work, without firſt asking them leave. Indeed in the Courſe of an Epic Poem, there are uſually ſeveral *Invocations*, particularly where any thing extraordinary or miraculous comes to be related: as when *Virgil* deſcribes the Metamorphoſis of *Æneas*'s Fleet into Sea-Nymphs; but the firſt *Invocation* is always the moſt conſiderable.

In the *Invocation*, *Boſſu* conſiders two things; the firſt is what the Poet requeſts, the ſecond to what Deity he addreſſes his Requeſt. As to the firſt, *Homer* has joined the *Invocation* ſo cloſely to the Propoſition, that he ſeems to invoke his Muſe for the whole Work. *Virgil*, on the contrary, only requeſts his Muſe to furniſh him with a part of his Subject, and even mentions what particular Part it is he deſires. After propoſing his Matter in all its Extent, he begs the Muſe to acquaint him with the Cauſe of it. As to the Deity invoked, the ſame Author obſerves, that it muſt always be, either the Divinity that preſides over Poetry in general, or that which preſides over the particular Subject of this Work. *Ovid*'s *Invocation*, in his *Metamorphoſes*, is of this latter kind, and ſo is that of *Lucretius*, thoſe of *Homer* and *Virgil* are of the former kind; they only invoke the Muſes, and thus they diſtinguiſh between the Divinities who preſide over Poetry, and thoſe who preſide over the Actions of the Poem, and who have Parts in it. By the way, it may be obſerved, that the Deities invoked are not looked on, even by the Poets themſelves, as Divine Perſonages, whence they expect any real Aſſiſtance. Under the Name of Muſe, they wiſh for the Genius of Poetry, and for all the Conditions and Circumſtances neceſſary for the Execution of their Deſign. Theſe are mere Allegories, or Manners of expreſſing themſelves poetically; juſt as when they make Gods of Sleep, of Reſt, Fame, and other natural and moral Things. Thus the Muſes come to be of all Ages, Countries, and Religions; there are *Pagan*, *Chriſtian*, *Greek*, *Latin*, and *Engliſh* Muſes.

INVOLUTION, a Term in Algebra ſignifying the raiſing of any Quantity from its Root to any Height aſſign'd. Suppoſe, for inſtance, $a+b$ were to be ſquared or raiſed to its ſecond Power; we ſay, *involve* $a+b$; that is, multiply it into itſelf, and it will produce $aa+2ab+bb$ of the ſame Quantity. And if it be *involved* again, or if that Square be multiplied by the Root, the Cube or third Power will be produced, *viz.* $aaa+3aab+3bba+bbb$. See *Evolution*.

INVOYCE: A particular Account of Commodities, Cuſtom, Proviſion, Charges, &c. ſent by a Merchant to his Factor or Correſpondent in another Country.

JOACHIMITES: The Name of a Sect the Followers of *Joachim*, Abbot of *Flora* in *Calabria*, who was eſteemed a Prophet while he lived, and left, at his Death, ſeveral Books of Prophecies, beſides other Works. In 1215, he and his Works were condemn'd together by the Council of the *Lateran*, and by the Council of *Arles* in 1260. It ſeems they were particularly fond of certain Ternaries. The Father, ſaid they, operated from the Beginning till the Coming of the Son; the Son from that time to theirs, *viz.* the Year 1260. and the Holy Spirit then took it up, and was to operate in his turn. They divided every thing that related to Men, Time, Doctrine, and Manner of Living, into three Claſſes or States, according to the three Perſons in the Trinity; every one of which States either had already, or was hereafter to ſucceed in its turn: and hence they call'd their Diviſions *Ternaries*. The firſt Ternary was that of Men. This comprehended three States or Orders of Men; the firſt State was that of married People, which had laſted, according to them, the whole Period of the Father; that is, the time of the Old Teſtament: The ſecond was that of Clerks, which laſted during the time of the Son: The third was that of Monks, wherein was to be an uncommon Effuſion of Grace, by the Holy Spirit. The ſecond Ternary was that of Doctrine, which they divided alſo into three: The Old Teſtament, which they attributed to the Father; the New, which they attributed to the Son; and the Everlaſting Goſpel, which they attributed to the Holy Spirit. In the Ternary of Time, they gave all the Time elapſed from the Beginning of the World till the Coming of Chriſt, to the Father; in which Time, ſaid they, the Spirit of the Law of *Moſes* prevailed. They gave to the Son the 1260 Years from Jeſus Chriſt to their Time; during which, the Spirit of Grace prevailed. Laſtly, the third, which was to come, and which they call'd the Time of the greateſt Grace, was for the Holy Spirit. Another Ternary conſiſted in the Manner of Living. In the firſt Time, under the Father, Men lived according to the Fleſh; in the ſecond, under the Reign of the Son, Men lived according to the Fleſh and the Spirit; in the third, which was to laſt to the end of the World, they were to live according to the Spirit. The *Joachimites* maintain'd, That in the laſt Times all Sacraments and Signs were to ceaſe; and the Truth was to appear openly, and without any Veil.

JOBBER, a Perſon who undertakes *Jobbs*, or ſmall Pieces of Work. In ſome Statutes it is uſed for a Perſon who buys and ſells Cattel for others.

JOGHI'S: The Name of a Sect of Heathen Religious in the *Eaſt-Indies*. They never marry, nor hold any thing in private Property; but live on Alms, and practiſe ſtrange Severities. They are ſubject to a General, who ſends them from one Country to another to preach. They are properly a kind of penitent Pilgrims, and are ſuppoſed to be a Branch of the antient *Gymnoſophiſts*. They frequent principally ſuch Places as are conſecrated by the Devotion of the People; and pretend to live ſeveral Days together without eating or drinking. After having gone thro a Courſe of Diſcipline for a certain Time, they look on themſelves as impeccable, and privileged to do any thing: upon which they give a Looſe to their Paſſions, and run into all manner of Debauchery.

JOINING OF ISSUE. See *Iſſue*.

JOINT, the Juncture, Articulation, or Aſſemblage of two or more things. *Joint*, in Architecture, is the Separation between the Stones, which is fill'd with Mortar, Plaiſter, or Cement. In Carpentery, &c. *Joint* ſignifies the ſeveral Manners of aſſembling or fitting Pieces of Wood together: Thus we ſay, *A Dove-tail Joint*, &c.

JOINT-RULE. See *Carpenters Joint-Rule*.

JOINT-TENANTS, in Law, are thoſe who come to, and hold Lands and Tenements by one Title, *pro Indiviſo*, or without Partition. Theſe are diſtinguiſh'd from ſole or ſeveral Tenants, from Parceners and from Tenants in Common: Antiently they were call'd *Participes*, and not *Hæredes*. They muſt jointly plead, and jointly be impleaded by others; which is common to them and Coparceners. But *Joint-Tenants* have a ſole Quality of Survivorſhip, which Coparceners have not. So that if there be two or three *Joint-Tenants*, and one hath Iſſue, and dies; then he, or thoſe *Joint-Tenants* that ſurvive, ſhall have the whole by Survivorſhip.

JOINTURE, is a Covenant whereby the Husband, or ſome other Friend in his behalf, maketh over to his Wife, on condition of Marriage, certain Lands and Tenements for Term of Life, or otherwiſe.

JOISTS, in Architecture, are thoſe Pieces of Timber framed into the Girders and Summers, on which the Boards

Boards of the Floors are laid: They are from six to eight Inches square, and ought seldom to lie at a greater distance from each other than ten Inches, never than twelve; nor ought they ever to be longer than ten Foot, or to lie less into the Wall than eight Inches. Sometimes the Carpenters furr their *Joists*, as they call it, that is, lay two Rows of *Joists* one over the other.

JONCTURE, or JOINTURE: The same with Joint.

IONIC, in Architecture, is the Name of one of the five Orders. The first Idea of it was given by the People of *Ionia*; who, according to *Vitruvius*, form'd it on the Model of a young Woman, dress'd in her Hair, and of an easy elegant Shape: whereas the Doric had been form'd on the Model of a strong, robust Man. The *Ionic* Column is the third in order; and is distinguish'd from the Composite, in that it has none of the Leaves of Acanthus in its Capital; and from the Tuscan, Doric and Corinthian, by the Volutes, or Rams-Horns, which adorn its Capital: and from the Tuscan and Doric, too, by the Channels or Flutings in its Shaft. These Flutings are in number 24. They are not always concave from the top of the Shaft to the bottom; but for that third of it next the Base, are fill'd up with a kind of Rods or Canes, by the *French* call'd *Batons:* and in the other two thirds, are left hollow, or striated, in imitation of the Folds or Plaits of a Garment. This Column is a Medium between the Massive and the Delicate Orders, the Simple and the Rich. Its Height is 18 Modules, or 9 Diameters of the Column taken at the bottom. When it was first invented, its Height was but 16 Modules; but the Antients, to render it still more beautiful than the Doric, augmented its Height, by adding a Base to it, which was unknown in the Doric. M. *le Clerc* makes its Entablement 4 Modules and 10 Minutes, and its Pedestal 6 entire Modules: so that the whole Order makes 28 Modules 10 Minutes. 'Tis said, the Temple of *Diana* at *Ephesus*, the most celebrated Edifice of all Antiquity, was of this Order. At present it is properly used in Churches and Religious Houses, in Courts of Justice, and other Places of Tranquillity and Devotion. This Order has one advantage above any of the rest, and it consists in this, that the fore and hind-parts of its Capital are different from its Sides. But this is attended with an Inconvenience, when the Ordonnance is to turn from the Front of the Building to the Side: To obviate which, the Capital may be made Angular, as is done in the Temple of *Fortuna Virilis*. *Scamozzi*, and some other modern Architects, have introduced the upper part of the Composite Capital in lieu of the *Ionic*; imitating that of the *Temple of Concord*, whose four Sides are alike: to render it more beautiful, the Volute may be made a little oval and inclining. See *Order* and *Volute*.

Ionic Dialect, in Grammar, is a manner of Speaking peculiar to the People of *Ionia*. At first it was the same with the antient *Attic*, but passing into *Asia*, did not arrive at that Delicacy and Perfection to which the *Athenians* attain'd. Instead of that, it rather degenerated, in *Asia Minor*; being corrupted with the Admission of foreign Idioms. In this *Dialect* it was that *Herodotus* and *Hippocrates* wrote.

Ionic Transmigration was heretofore a very celebrated *Epocha*. It took its Rise from the Retreat of the *Athenian* Colonies, who, upon the Death of *Codrus*, put themselves under the Command of his Son *Neleus*, and establish'd the twelve Cities of *Ionia* in *Asia*. These Colonies, according to *Eratosthenes*, were establish'd 50 Years after the Return of the *Heraclidæ*; and, according to *Marsham*, 77 Years after the taking of *Troy*.

Ionic Sect, was the first of the antient *Sects* of Philosophy; the others were the *Italic* and *Eleatic*. The Founder of this *Sect* was *Thales*, who being a Native of *Miletus* in *Ionia*, occasion'd his Followers to assume the Appellation of *Ionic*. 'Twas the distinguishing Tenet of this *Sect*, That Water was the Principle of all Natural Things. This is what *Pindar* alludes to in the beginning of his first *Olympic Ode*.

JOURNAL, a Day Book, Register, or Account of what passes daily.

In Merchants Accounts, the *Journal* is a Book into which every particular Article is posted out of the Waste-Book, and made Debtor: This is to be very clearly express'd, and fairly engross'd.

Journal, in Sea-Affairs, is a Register kept by the Pilots; wherein particular notice is taken of every thing that happens to the Ship from Day to Day, and from Hour to Hour, with regard to the Winds, the Rhumbs, the Rake, Soundings, &c. in order to enable them to adjust their Reckoning, and determine the Place where they are.

Journal is now become a common Name for many of our News-Papers, which detail the daily Transactions of *Europe*. It is also used for the Title of several Books which come out at stated Times, and give Abstracts, Accounts, &c. of the several new Books that are publish'd, and the several new Improvements daily made in Arts and Sciences. The first *Journal* of this kind was the *Journal des Sçavans*, printed at *Paris*. The Design was set on foot for the Ease of such as are too busy or too lazy to read the entire Books themselves. It seems an excellent way of satisfying a Man's Curiosity, and of becoming learned upon easy Terms: And so useful is it found, that it has been executed in most other Countries, tho under a great Variety of Titles. Of this kind are the *Philosophical Transactions* of *London*; the *Acta Eruditorum* of *Leipsic*; the *Republique des Lettres*; the *Bibliotheque Universelle & Choisie* of M. *le Clerc*; the *Memoirs* of *Treeves*, &c. In 1692, *Juncker* printed in *Latin*, *An Historical Treatise of the* Journals *of the Learned*, publish'd in the several Parts of *Europe*; and *Wolfius*, *Burchardus*, *Gottelfius*, and *Struvius*, have done something of the same kind. The *Memoirs of the Academy of Sciences*; those of the *Academy des Belles Lettres*; The *Miscellanea Naturæ Curiosorum*, which ended in 1706; The Experiments of the Academy *del Cimento*: The *Acta Philo-Exoticorum Naturæ & Artis*, which appear'd from *March* 1686 to *April* 1687, and which are a History of the Academy of *Bresse*; and the *Miscellanea Berolinensia*, or Memoirs of the Academy of *Berlin*, are not properly *Journals*, tho they are frequently rank'd in the Number.

Juncker and *Wolfius* give the Honour of the first Invention of *Journals* to *Photius*. His *Bibliotheca*, however, is not altogether the same with our *Journals*; nor was his Design the same. It consists of Abridgments and Extracts of Books that he had read during his Embassy in *Persia*.

M. *Salo* first began the *Journal des Sçavans* at *Paris* in 1665, under the Name of the Sieur *Hedouville*; but his Death soon after interrupted the Work. Upon this the Abbot *Gallois* took it up, and he in the Year 1674. gave way to the Abbot *de la Roque*, who continued it nine Years, and was succeeded by M. *Cousin*, who carried it on till the Year 1702, when the Abbot *Bignon* instituted a new Society, and committed the Care of continuing the *Journal* to them. It was now improved, and published under a new Form. This Society is still continued, and M. *de Voyer* has the Inspection of the *Journal*; which is no longer the Work of any single Author, but of a great Number. The other *French Journals* are the Memoirs and Conferences on Arts and Sciences, by M. *Denis*, during the Years 1672, 1673, and 1674. New Discoveries in all the Parts of Physic by M. *de Blegny*. The *Journal* of Physic, begun in 1684, and some others discontinued almost as soon as begun. The *Nouvelles de la Republique des Lettres*, News from the Republic of Lettres, were begun by M. *Bayle* in 1684, and carried on by him till the Year 1687, when M. *Bayle* being disabled by Sickness, his Friends M. *Bernard* and M. *de la Roque* took 'em up, and continued 'em till 1699. After an Interruption of nine Years, M. *Bernard* resumed the Work, and continued it to the Year 1710. The *History of the Works of the Learned*, by M. *Basnage*, was begun in 1686, and ended in 1710. The *Universal Historical Dictionary*, by M. *le Clerc*, was continued to the Year 1693, and contained twenty five Volumes. The *Bibliotheque Choisie*, of the same Author, began in 1703. The *Memoirs for a History of Sciences and Arts*, usually called *Memoires de Trevoux*, from the Place where they are published, began in 1701. The *Essays of Literature* reached but to a twelfth Volume in 1702, 1703, and 1704; these only take notice of antient Authors. The *Journal Litteraire*, by Father *Hugo*, begun and ended in 1705. At *Hambourgh* they have made two Attempts for a *French Journal*, but the Design failed: an *Ephemeris Sçavans* has also been undertaken, but that soon disappeared. A *Journal des Sçavans*, by M. *Dartis*, appeared in 1694, and was dropt the Year following. That of M. *Chauvin* begun at *Berlin* in 1696, held out three Years; and an Essay of the same kind was made at *Genoa*. To these may be added, the *Journal Litteraire*, begun at the *Hague* in 1713, and that of *Verdun*, and the *Histoire Litteraire de la Grande Bretagne*, by M. *de la Roche*, whereof there have already been four Volumes, and which is confined to *English* Books alone.

The *English Journals* of this kind are the *History of the Works of the Learned*, begun at *London* in 1699. *Censura Temporum* in 1708. About the same time there appeared two new ones; the one under the Title of *Memoirs of Literature*, containing little else but an *English* Translation of some Articles in the foreign *Journals*, by M. *de la Roche*; the other a Collection of those Tracts, entitled *Bibliotheca Curiosa*, or a *Miscellany*.

The *Italian Journals* are that of Abbot *Nazari*, which lasted from 1668 to 1681, and was printed at *Rome*. That of *Venice* began in 1671, and ended at the same time with the other; the Authors were *Peter Moretti* and *Francis Miletti*. The *Journal* of *Parma*, by *Roberti* and Father *Bacchini*,