THE

PREFACE.

'TIS not without ſome Concern that I put this Work in the Reader's Hands; a Work ſo diſproportionate to a ſingle Perſon's Experience, and which might have employ'd an Academy. What adds to my Jealouſy, is the little meaſure of Time allow'd for a Performance to which a Man's whole Life ſcarce ſeems equal. The bare Vocabulary of the Academy *della Cruſca* was above forty Years in compiling, and the Dictionary of the *French* Academy much longer; and yet the preſent Work is as much more extenſive than either of them in its Nature and Subject, as it falls ſhort of 'em in number of Years, or of Perſons employ'd.

THE Reader might be here led to ſuſpect ſomething of Diſingenuity; and think I firſt put a Book upon him, and then give him Reaſons why I ſhould not have done it.-----But his Suſpicions will ceaſe, when he is appriz'd of the Advantages under which I engaged; which, in one Senſe, are ſuperior to what had been known in any former Work of the Kind; all that had been done in them accruing, of courſe, to the Benefit of this. I come like an Heir to a large Patrimony, gradually rais'd by the Induſtry, and Endeavours of a long Race of Anceſtors. What the *French Academiſts*, the *Jeſuits de Trevoux*, *Daviler*, *Chomel*, *Savary*, *Chauvin*, *Harris*, *Wolfius*, and many more have done, has been ſubſervient to my Purpoſes. To ſay nothing of a numerous Claſs of particular Dictionaries which contributed their Share; Lexicons on almoſt every Subject, from Medicine and Law, down to Heraldry and the Manage.

Yet this is but a Part. I am far from having contented my ſelf to take what was ready procured; but have augmented it with a large Acceſſion from other Quarters. No part of the Commonwealth of Learning, but has been traffick'd to on this Occaſion. Recourſe has been had to the *Originals* themſelves on the ſeveral Arts; and, not to mention what ſmall Matters could be furniſhed *de proprio penu*, the Reader will here have Extracts and Accounts from a great Number of *Authors* of all Kinds, either overlook'd by former Dictionariſts, or not then extant; and a Multitude of Improvements in the ſeveral Parts, eſpecially of Natural Knowledge, made in theſe laſt Years. I ſhould produce Inſtances hereof; but I hope this would be needleſs, as it is endleſs; and that there are few Pages which will not afford ſeveral.

SUCH are the Sources from whence the Materials of the preſent Work were derived; which, it muſt be allowed, were rich enough not only to afford Plenty, but even Profuſion: So that the chief Difficulty lay in the Form; in the Order, and Œconomy of the Work: To diſpoſe ſuch a Variety of Materials in ſuch manner, as not to make a confuſed Heap of incongruous Parts, but one conſiſtent Whole.-----And here it muſt be confeſs'd there was no Aſſiſtance to be had; but I was forced to ſtand wholly on my own Bottom. Former Lexicographers have not attempted any thing like Structure in their Works; nor ſeem to have been aware that a Dictionary was in ſome meaſure capable of the Advantages of a continued Diſcourſe. Accordingly, we ſee nothing like a Whole in what they have done: And hence, ſuch Materials as they did afford for the preſent Work, generally needed further Preparation, ere they became fit for our Purpoſe; which was as different from theirs, as a Syſtem from a Cento.

THIS we endeavoured to attain, by conſidering the ſeveral Matters not only abſolutely and independently, as to what they are in themſelves; but alſo relatively, or as they reſpect each other. They are both treated as ſo many Wholes, and as ſo many Parts of ſome greater Whole; their Connexion with which, is pointed out by a *Reference*. So that by a Courſe of References, from Generals to Particulars; from Premiſes to Concluſions; from Cauſe to Effect; and *vice verſa*, *i. e.* in one word, from more to leſs complex, and from leſs to more: A Communication is opened between the ſeveral Parts of the Work; and the ſeveral Articles are in ſome meaſure replaced in their natural Order of Science, out of which the Technical or Alphabetical one had remov'd them.

FOR an Inſtance-----The Article ANATOMY is not only conſider'd as a *Whole*, *i. e.* as a particular Combination or Syſtem of Ideas; and accordingly divided into its Parts, *Humane* and *Comparative*: and Humane again ſubdivided into the Analyſis of *Solids* and *Fluids*, (which are referr'd to in the ſeveral Places in the Book, where they themſelves being treated of, refer to others ſtill lower, and ſo on) but alſo as a *Part* of MEDICINE; which accordingly it refers to, and which it ſelf refers to another higher, *&c.*-----By which means a Chain is carried on from one End of an Art to the other, *i. e.* from the firſt or ſimpleſt Complication of Ideas appropriated to the Art, which we call the *Elements* or Principles thereof; to the moſt complex or general one, the *Name* or Term that denotes the whole Art.

NOR is the Purſuit dropt here: but as the Elements or Data in one Art, are ordinarily *quæſita* in ſome other ſubordinate one, and are furniſhed thereby; (as here for Inſtance, the Elements of *Anatomy* are furniſhed by *Natural Hiſtory*, *Phyſicks*, and *Mechanicks*; and Anatomy may be conſidered as a Datum, or Element furniſhed to Medicine) We carry on the View farther, and refer out of one Art or Province into the adjoining ones, and thus lay the whole Land of Knowledge open: It appears indeed with the Face of a Wilderneſs; but 'tis a Wilderneſs thro' which the Reader may purſue his Journey as ſecurely, tho not ſo expeditiouſly and eaſily, as thro' a regular Parterre.

IT may be even ſaid, that if the Syſtem be an Improvement upon the Dictionary; the Dictionary is ſome Advantage to the Syſtem; and that this is perhaps the only Way wherein the whole Circle or Body of Knowledge can be deliver'd. In any other Form, many thouſand Things muſt neceſſarily be hid and overlook'd: All the Pins, the Joints, the binding of the Fabrick muſt be inviſible of courſe; all the leſſer Parts, one might ſay all the Parts whatſoever, muſt be in ſome meaſure ſwallowed up in the Whole. The Imagination, ſtretch'd

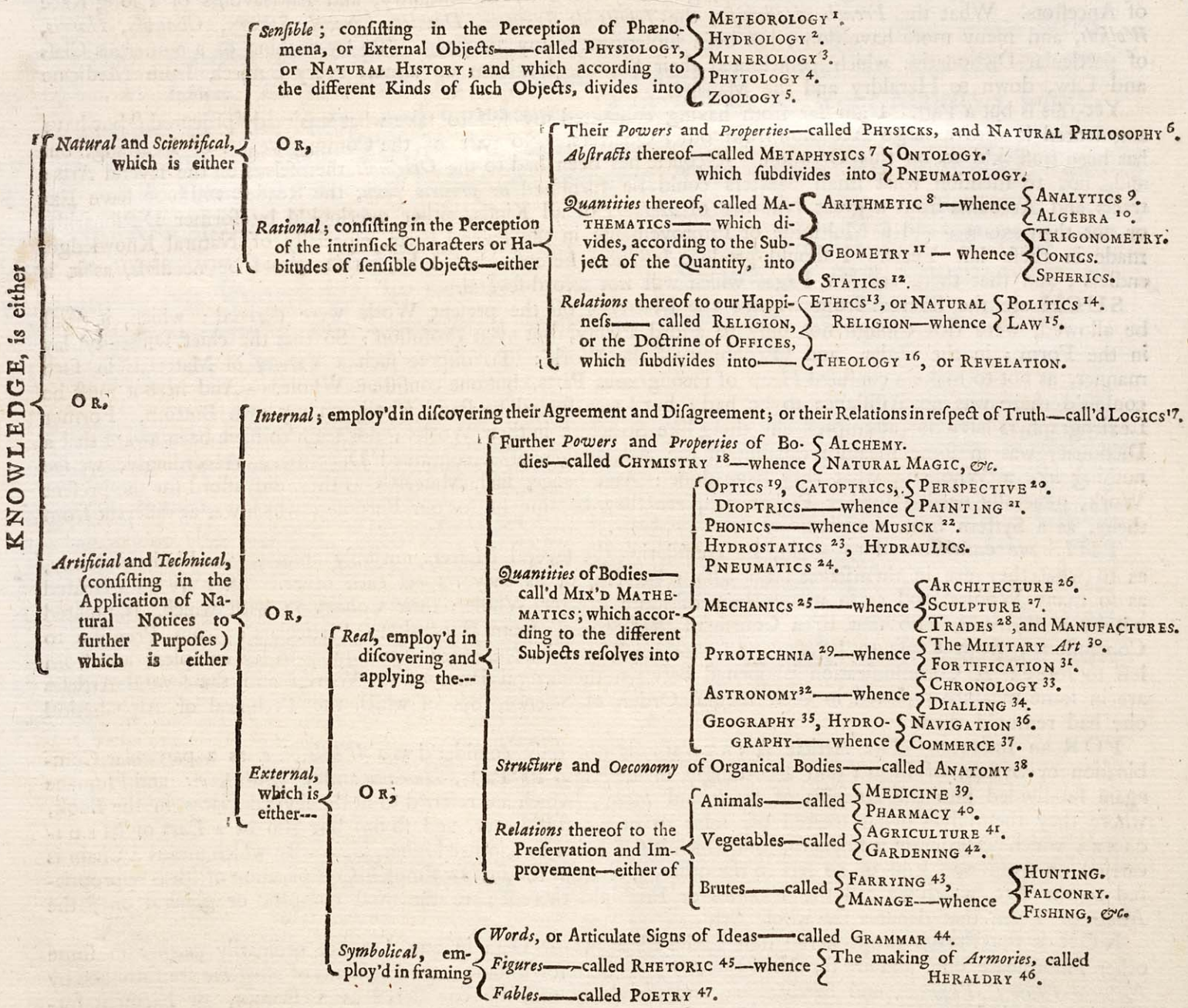
and amplified to take in ſo large a Structure, can have but a very general, indiſtinguiſhing Perception of any of the Parts.-----Whereas the Parts are not leſs Matter of Knowledge when taken ſeparately, than when put together. Nay, and in ſtrictneſs, as our Ideas are all Singulars or Individuals, and as every Thing that exiſts is one; it ſeems more natural to conſider Knowledge in its proper Parts, *i. e.* as divided into ſeparate Articles denoted by different Terms; than to conſider the whole Aſſemblage of it in its utmoſt Compoſition: which is a thing merely artificial and imaginary.

AND yet the latter Way muſt be allow'd to have many and real Advantages over the former; which in truth is only of uſe and ſignificance as it partakes thereof: For this Reaſon, that all Writing is in its own Nature artificial; and that the Imagination is really the Faculty it immediately applies to. Hence it ſhould follow, that the moſt advantageous way, is to make uſe of both Methods: To conſider every Point both as a Part; to help the Imagination to the Whole: and as a Whole, to help it to every Part.-----Which is the View in the preſent Work—ſo far as the many and great Difficulties we had to labour under would allow us to purſue it.

IN this View we have endeavoured to give the Subſtance of what has been hitherto found in the ſeveral Branches of Knowledge both natural and artificial; that is, of Nature, *firſt*, as ſhe appears to our Senſes; either ſpontaneouſly, as in Natural Hiſtory; or with the Aſſiſtance of Art, as in Anatomy, Chymiſtry, Medicine, Agriculture, *&c.* *Secondly*, to our Imagination; as in Grammar, Rhetorick, Poetry, *&c.* *Thirdly*, to our Reaſon; as in Phyſicks, Metaphyſicks, Logicks, and Mathematicks. With the ſeveral ſubordinate Arts ariſing from each; as Architecture, Painting, Sculpture, Trade, Manufactures, Policy, Law, *&c.* and numerous remote Particulars, not immediately reducible to any of theſe Heads; as Heraldry, Philology, Antiquities, Cuſtoms, *&c.*

THE *Plan* of the Work, then, I hope, will be allow'd to be good; whatever Exceptions may be taken to the Execution of it. It wou'd look extravagant to ſay, That half the Men of Letters of an Age might be employ'd in it to advantage; and yet it will appear, that a Work accompliſh'd as it ought to be, on the Footing of this, would anſwer all the Purpoſes of a Library, except Parade and Incumbrance; and contribute more to the propagating of uſeful Knowledge thro' the Body of a People, than any, I had almoſt ſaid all, the Books extant.----After this, let the Reader judge how far I may deſerve Cenſure for engaging in it, even diſadvantageouſly; and whether to have fail'd in ſo noble a Deſign, may not be ſome degree of Praiſe.

BUT, it will be here neceſſary to carry on the Diviſion of Knowledge a little further; and make a preciſe Partition of the Body thereof, in the more formal Way of Analyſis: The rather, as an Analyſis, by ſhewing the Origin and Derivation of the ſeveral Parts, and the Relation in which they ſtand to their common Stock and to each other; will aſſiſt in reſtoring 'em to their proper Places, and connecting 'em together.



THIS is a View of Knowledge, as it were, *in ſemine*; exhibiting only the grand, conſtituent Parts thereof. It would be endleſs to purſue it into all its Members and Ramifications; which is the proper Buſineſs of the Book it ſelf. It might here, therefore, ſeem ſufficient to refer from the ſeveral Heads thus deduced, to the ſame in the Courſe of the Work; where their Diviſion is carried on. And yet this would ſometimes prove inconvenient for the Reader; who to find ſome particular Matter muſt go a long Circuit, and be bandied from one part of the Book to another: To ſay nothing of the Interruptions which may frequently happen in the Series of References. To obviate this we ſhall take a middle Courſe, and carry on the Diſtribution further, in a Note in the Margin;

gin; but this in a looſer manner, to prevent the Embarraſs of an Analyſis ſo complex and diffuſive as this muſt prove. Some of the principal Heads of each Kind will here come in ſight, and ſuch as will naturally ſuggeſt, and lead to the reſt; ſo that this will afford the Reader a ſort of Summary of the Whole: And at the ſame time will diſpenſe a kind of auxiliary or ſuccedaneous Order thro'out the Whole; the numerous Articles omitted, all naturally enough ranging themſelves to their proper Places among theſe. A Detail of this Kind is of the more Conſequence, as it may not only ſupply the Office of a *Table of Contents*, by preſenting the diſperſed Materials of the Book in one View; but alſo that of a *Directory*, by indicating the Order they are moſt advantageouſly read in.-----*Note*, then, That the *initial* Articles here, tally to the *final* ones of the Analyſis; and that the ſeveral *Members* hereof, are ſo many *Heads* in the Book.

I

[1] METEOROLOGY, or the Hiſtory of AIR and ATMOSPHERE: including, 1°, that of its Contents, *Æther, Fire, Vapour, Exhalation*, &c. 2°, Meteors form'd therein, as *Cloud, Rain, Shower, Drop, Snow, Hail, Dew, Damp*, &c. *Rainbow, Parhelion, Halo, Thunder, Water-ſpout*, &c. Winds, *Mon-ſoon, Hurricane*, and the like.

[2] HYDROLOGY, or the Hiſtory of WATER; including that of *Springs, Rivers, Acidulæ*, &c. of *Lake, Sea, Ocean*, &c. of *Tides, Deluge*, and the like.

[3] MINEROLOGY, or the Hiſtory of EARTH; 1°, Its Parts, as *Mountain, Mine, Moſs, Bog, Grotto*; and their Phænomena, as *Earthquake, Volcano, Conflagration*, &c. Its Strata, as *Clay, Bole, Sand*- &c. 2°, Foſſils or Minerals, as *Metals, Gold, Silver, Mercury*, &c. with Operations relating to 'em, as *Fuſion, Refining, Purifying, Parting, Eſſaying*, &c. *Litharge, Lavatory, Pinea*, &c. Salts, as *Nitre, Natron, Gemma, Allum, Armoniac, Borax*, &c. Sulphurs, as *Arſenic, Amber, Ambergreaſe, Coal, Bitumen, Naphtha, Petrol*, &c. Semimetals, as *Antimony, Cinnabar, Marcaſite, Magnet, Biſmuth, Calamine, Cobalt*, &c. Stones, as *Marble, Porphyry, Slate, Asbeſtos*, &c. Gems, as *Diamond, Ruby, Emerald, Opal, Turcoiſe*, &c. *Emery, Lapis*, &c. whence *Ultramarine, Azure*, &c. Petrifactions, as *Cryſtal, Spar, Stalactites, Trochites, Cornu Ammonis*, and the like.

[4] PHYTOLOGY, or the Hiſtory of PLANTS; their Origin, in the *Seed, Fruit*, &c. Their Kinds, as *Tree, Herb*, &c. extraordinary Species, as *Tea, Coffee, Paraguay, Vine, Ginſeng, Cotton, Tobacco*, &c. *Coral, Muſhroom, Truffle, Paraſite, Miſſelto, Moſs*, &c. Parts, as *Root, Stone, Flower*; *Wood*, as *Guaiacum, Saſſafras, Ebony, Aloes*, &c. Leaf, as *Foliation, Roll*, &c. Bark, *Quinquina*, &c. *Piſtil, Farina, Stamina*, &c. Operations thereof, as *Vegetation, Germination, Circulation*, &c. Circumſtances, as *Perpendicularity, Parallelism, Fertility*, &c. Productions, as *Honey, Wax, Balm, Sugar, Manna*, &c. *Gum, Reſin, Camphor*, &c. *Indigo, Opium, Galls*, and the like.

[5] ZOOLOGY, or the Hiſtory of ANIMALS: Their Origin in *Egg, Embryo, Fœtus, Generation, Conception, Geſtation, Hatching, Migration*, &c. Their Kinds, as *Quadruped, Bird, Fiſh, Inſect, Reptile, Ruminant, Carnivorous*, &c. Extraordinary Species, as *Unicorn, Torpedo, Tarantula, Tortoiſe, Cameleon, Salamander*, &c. *Barnacle, Anchovy, Death-Watch*, &c. Monſters, as *Double Animals, Hermaphrodite, Mule, Pigmy, Giant*, &c. Metamorphoſes, as *Aurelia, Metempſychoſis*, &c. Parts, as *Head, Hand, Foot, Finger, Tail, Fin, Wing, Gills*, &c. Covering, as *Hair, Wool, Silk, Feathers*, &c. Armature, as *Nail, Sting, Horn, Tooth, Shell, Proboſcis, Web*, &c. Productions, as *Pearl, Bezoard, Caſtoreum, Civet, Meconium, Mummy, Uſnea*, &c. *Kermes, Cochineal*, &c. Motion, as *Flying, Swimming*, and the like.

[6] PHYSICS, or the Doctrine of CAUSES; as *Nature, Law*, &c. Occaſions or Means, as *Principle, Matter, Form*, &c. Their Compoſition or Conſtitution, in *Element, Atom, Particle, Body. Chaos, World, Univerſe, Space, Vacuum*, &c. Properties of Body, as *Extenſion, Solidity, Figure, Diviſibility*, &c. Powers thereof, as *Attraction, Cohesion, Gravitation, Repulſion. Elaſticity, Electricity, Magnetiſm*, &c. Qualities, as *Fluidity, Firmneſs, Ductility, Hardneſs, Volatility, Denſity, Polarity*, &c. *Light, Heat, Cold*, &c. Operations or Effects thereof, as *Motion, Rarefaction, Dilatation, Condenſation. Diſſolution, Ebullition, Freezing, Evaporation, Fermentation, Digeſtion, Effervescence*, &c. *Viſion, Seeing, Hearing, Feeling, Smelling*, &c. Modifications or Changes, as *Alteration, Corruption, Putrefaction, Generation, Degeneration, Tranſmutation*, &c. Syſtems or Hypotheſes hereof, *Corpuſcular, Epicurean, Ariſtotelian, Peripatetic, Carteſian, Newtonian*, &c.—— Occult and Fictitious Qualities, Powers, and Operations, *Antiperiſtaſis, Sympathy, Antipathy, Archæus*, &c. *Magic, Witchcraft, Virgula Divina, Ligature, Taliſman, Cabbala*, &c. *Druid, Bard, Brachman, Gymnoſophiſt, Magi, Roſicrucian*, and the like.

[7] METAPHYSICS, or the Doctrine of ENS, *Eſſence, Exiſtence, Power, Act, Underſtanding*, &c.——The MIND, Its Faculties, *Apprehenſion, Judgment, Imagination, Reaſon, Wit*, &c. Its Operations, *Retention, Reflection, Aſſociation, Abſtraction*, &c. Its Perceptions, as *Subſtance, Accident, Mode*, &c. Relations, as *Unity, Multitude, Infinity, Univerſal*, &c. *Quantity, Quality, Whole, Part*, &c. *Genus, Species, Difference*, &c. *Proper, Oppoſite, Circumſtance, External*, &c. Effects hereof, *Knowledge, Science, Art, Experience*, &c. Conditions, *Probability, Certainty, Fallacy*, &c. Syſtems hereof, *Nominals, Scotiſts*, &c.

[8] ARITHMETIC, including the Doctrine of DISCRETE or *Diſcontinuous* QUANTITY, viz. *Number, Ratio, Proportion*, &c. Kinds, as *Integer, Fraction, Decimal, Surd*, &c. Relations, as *Root, Power, Square, Cube*, &c. Rules or Operations thereof, as *Notation, Numeration, Addition, Subtraction*, &c. *Reduction, Practice, Poſition*, &c. *Extraction, Approximation*, &c. Inſtruments ſubſervient thereto, as *Logarithms, Nepair's Bones*, &c.

[9] ANALYTICS, or the Reſolution of PROBLEMS by *Species* or Symbolical Expreſſions: Rules or Operations hereof, *Addition, Subtraction, Multiplication*, &c. Application thereof, in *Combinations, Permutations, Magic Squares, Chances, Gaming*, &c. *Series, Progreſſions*, &c. *Methods de Maximis, Fluxions, Exponentials, Tangents*, &c.

[10] ALGEBRA, or the Doctrine of EQUATIONS; *Simple, Quadratic, Cubic*, &c. Operations thereof, as *Reduction, Conſtruction*, &c.

[11] GEOMETRY, or the Doctrine of EXTENDED, or *Continuous* QUANTITY, viz. 1°, Lines, *Right, Perpendicular, Parallel, Oblique*, &c. Angles, *Acute, Scalenous, Vertical, Oppoſite*, &c. 2°, Figures, or Surfaces, *Triangle, Square, Parallelogram, Trapezium, Polygon*, &c. Circumſtances hereof, as *Perimeter, Area*, &c. Operations relating hereto, as *Biſſecting, Dividing, Multiplying, Meaſuring*, &c. Inſtruments uſed therein, as *Compaſſes, Ruler, Square, Parallelism, Scale*, &c. Curves, as *Circle, Cycloid, Ciſſoid, Catenaria, Cauſtic, Evolute, Quadratrix*, &c. Circumſtances thereof, as *Axis, Diameter, Radius, Centre, Circumference, Abſciſs, Ordinate*, &c. *Arch, Chord, Sine, Tangent, Secant*, &c. Inſtruments uſed herein, as *Artificial Lines, Canons*, &c. Operations ariſing herefrom, as Surveying, taking *Angles* or *Bearings*, &c. with *Quadrant, Plain-Table, Semicircle, Circumferentor*, &c. taking *Diſtances*, with *Chain, Perambulator*, &c. *Plotting* into *Draught, Map*, &c. with *Protractor*, &c. 3°, Solids or Bodies, as *Cube, Parallelopiped, Priſm, Pyramid, Cylinder, Polyhedron*, &c. Their *Surface, Solidity*, &c. Operations relating hereto, as *Cubature*, meaſuring of *Timber, Gauging*, &c. Inſtruments uſed herein, as *Carpenters Rule, Sector, Sliding Rule, Gauging Rod*, &c.——The Sphere, its Doctrine, *Projection*, &c. Application thereof, in *Planiſphere, Analemma*, &c.——The Cone, its *Sections, Ellipſis, Parabola, Hyperbola*, &c. Their *Aſymptotes, Foci*, &c. Their *Conſtruction, Quadrature, Rectification*, &c.

[12] STATICS, or the Doctrine of MOTION; Its Laws, *Velocity, Momentum*, &c. Cauſes, as *Gravity, Percuſſion, Communication*, &c. Modifications, as *Compoſition, Acceleration, Retardation, Reflection, Refraction*, &c. Kinds, as *Aſcent, Deſcent, Central, Centripetal*, &c. *Oſcillation, Undulation, Projection*, &c. Powers or Applications thereof, in *Lever, Screw*, &c. *Pendulum, Projectile*, &c. Operations directed hereby, as *Gunnery*, the *Mechanical Arts*, &c. enumerated hereafter.

[13] ETHICS, or the Conſideration of *Natural Inclinations, Paſſions, Taſtes*, &c. Objects thereof, as *Good, Evil, Virtue, Vice, Beauty, Deformity*, &c. *Pleaſure, Pain*, &c. *Rectitude, Equity, Conſcience*, &c. *Law, Obligation*, &c. *Will, Liberty, Action, Aſſent*, &c. *Neceſſity, Premotion, Providence*, &c. Syſtems hereof, *Stoiciſm, Platoniſm, Academy, Cynic*, and the like.

[14] POLICY, or the Conſideration of SOCIETY and COMMONWEAL; Its Origin, in *Contract*, &c. Conſtitutions and Forms thereof, as, 1°, *Monarchy, Deſpotiſm*, &c. Powers thereof, *King, Queen, Prince, Duke. Emperor, Sultan, Sophy, Caliph, Cæſar, Czar, Inca, Ethnarch, Tetrarch, Deſpot*, and the like. Their Titles, *Majeſty, Highneſs, Grace, Excellence*, and the like. Their Regalia, *Crown, Sceptre, Tiara, Faſces*, &c. 2°, Ariſtocracy; its Powers, as *Archon, Dictator, Doge, Senate, Council*, &c. 3°, Democracy; *States-General, Stadtholder, Protector*, &c. Their Succeſſion, *Elective, Hereditary*, by *Primogeniture*, &c. Their Tranſactions, as *Peace, War, Treaty, Union, League, Croiſade*, &c. By *Armies, Fleets, Embaſſies. Secretary, Plenipotentiary, Envoy, Legate, Nuntio*, &c. Their Territories, *Empire, Principality, Signory*, &c. Their Eſtates, *Nobles, Commons, Clergy. Cenſus, Enumeration, Tribe, Quarter*, &c. *Province, Circle, County, City, Town*, &c. Magiſtrature, *Chancellor, Judge, Sheriff, Juſtice, Mayor, Alderman, Bailiff, Conſtable. Inter-Rex, Conſul, Pretor, Cenſor, Vizir. Tribune, Triumvir, Provoſt, Ephori, Ædile, Prefect, Queſtor, Proconſul. Vice-Roy, Lieutenant, Steward, Warden, Keeper. Juriſconſultus, Procurator, Advocate, Barriſter, Prothonotary, Cuſtos, Philazer, Chirographer, Uſher, Clerk*, &c. Their Juriſdiction; Courts, as *Areopagus, Comitia*, &c. *Parliament, Diet, Divan. Chamber, Aſſize, Privy Council*, &c. *Chancery, King's-Bench, Exchequer, Admiralty, Verge, Seſſions, Turn, County Court, Leet, Eyre*, &c. *Terms, Circuits, Commiſſions, Oyer. Convocation, Arches, Prerogative, Faculties, Delegates. Rota, Inquiſition*, &c. Their Revenues, *Treaſury, Fiſc, Exchequer, Tally, Political Arithmetic. Duties, Cuſtoms, Gabel, Exciſe*, &c. *Coinage, Money, Intereſt, Uſury*, &c. Their Houſhold, *Chamber, Green-Cloth, Ward-robe*, &c. Under *Steward, Chamberlain, Comptroller, Cofferer, Aga, Oda*, &c. *Guard, Stables, Ordnance*, &c. directed by *Captain, Maſter, Equerry*, &c. Militia, *Navy, Poſt, Timariot, Arriere-ban*, &c. Dignities, *Dauphin, Elector, Palatine, Grave, Palſgrave. Thane, Earl, Count, Knight, Garter, Baronet, Bath, Teutonic, Malta, Elephant*, &c. *Gentleman, Yeoman*, &c. Their *Names, Sirnames, Titles, Precedence*, &c. Factions, *Patrician, Guelf, Tory*, &c. Corporations, or leſſer *Communities, Univerſity, Academy, College*;

I MIGHT here have ended my Preface; and perhaps the Reader would be willing enough to be thus dismiss'd. But something has been already started which will require a further Disquisition.-----The Distribution we have made of Knowledge is founded on this, That the several Branches thereof commence either *Art* or *Science* according to the Agency or Non-agency of the human Mind in respect thereof: It remains to take the Matter up a little higher; and explain the Reason and Manner of this Operation. To consider Knowledge in its Principles,

lege, Society, Chapter, School, Hospital, Inn. Public *Edifices, Guild-hall, Prison, Tower, Arsenal, Library, Musæum, Circus,* &c. Solemn *Ceremonies,* as *Triumph, Tournament, Carrousel, Quadril. Donative, Medal, Trophy, Monument, Funeral, Tomb, Catacomb,* &c.

[15] LAW, or the Rules and Measures of SOCIETY; publish'd in *Act, Statute, Charter, Rescript, Constitution, Decretal, Senatus-consultum, Pragmatic Sanction,* &c. Recorded, in *Institute, Code, Novel, Register, Pandect, Corpus, Domesday,* &c. Kinds, *Civil, Canon, Sumptuary,* &c. Respecting, 1°, Persons, as *the King*; his *Prerogative, Royalties,* &c. *viz.* granting *Dispensation, Pardon, Commendam, Exemption. Dignities, Franchises. Forest, Park, Purlieu, Vert, Chase. Impost, Subsidy, Toll, Tax, Aid, Hidage, Scutage, Prisage. Waif, Estray, Escheat, Treasure Trove,* &c. Officers and Magistrates, created by *Writ, Warrant, Commission,* &c. Their *Oath, Test, Declaration. Visitation, Procuration,* &c. Corporations, *Regular, Secular,* &c. made by *Charter, Patent,* &c. dissolved by *Quo Warranto, Mandamus,* &c. Subjects, as *Denizen, Naturalization. Husband, Wife, Marriage, Concubine, Separation, Alimony, Dower, Affinity, Bastard. Adoption, Emancipation. Lord, Tenant, Villain, Vassal. Client, Patron. Servant, Slave, Retainer. Manumission, Enfranchising,* &c. *Tenure, Service, Homage, Fealty, Serjeanty, Escuage, Relief, Guardian, Wardship, Socage. Heir, Intestate, Ancestor,* &c.——2°, Estates or Things; either Real, as *Tenements, Hereditaments. Freehold, Fee, Customary, Tail, Gavelkind, Courtesy,* &c. In *Reversion, Mortgage, Hypotheca,* &c. *Manor, Demesn, Honours. Common, Glebe, Advowson,* &c. Acquired by *Occupancy, Prescription, Descent, Deed, Feoffment, Fine, Recovery. Defeizance, Lease, Devise, Attournment, Investiture, Livery,* &c. Lost by *Alienation, Mortmain, Disseisin, Abatement. Surrender, Discontinuance, Disclaimer, Forfeiture, Resignation, Deprivation, Lapse,* &c. Or Personal, as *Goods, Chattels, Emblements, Annuity, Debts, Specialty, Recognizance,* &c. Acquired by *Succession, Heriot, Mortuary, Heir Loom. Testament, Executor, Administrator, Ordinary. Judgment, Fieri facias,* &c.——3°, Wrongs or Injuries; either Criminal, and to Persons, as *Treason, Parricide, Murder, Felony, Assault, Rape, Assassin. Adultery, Fornication, Defloration, Polygamy, Heresy,* &c. Prosecuted by *Indictment, Accusation, Actions of Conspiracy,* and *upon the Case, Habeas Corpus,* &c. Punish'd, with *Hanging, Crucifixion, Wheel, Furca, Scala, Pillory, Transportation, Divorce, Scaphism,* &c. Or Civil, and to Things; as *Trespass, Nuisance, Deforcement,* &c. Remedied by Writs of *Quare Impedit, Darrein Presentment, Appeal, Atteint, Error, Right, Disceit, Supersedeas, Audita Querela,* &c. Suit, or Course of Proceedings whereby Redress is procured; including, 1°, *Process,* either by *Bill, Summons, Subpœna, Attachment, Capias, Exigent,* &c. to which belong *Appearance, Attorney, Bail, Essoign, Default, Nonsuit, Arraignment,* &c. 2°, Pleading; whence *Count, Declaration, Aid Praier, Voucher, Age Prier, Bar, Abate, Release, Replication, Outlawry, Sequestration,* &c. 3°, Issue; whence *Demurrer.* 4°, Trial; whence *Proof, Evidence, Presumption, Oath, Affidavit, Affirmation. Jury, Challenge, Array, Verdict. Battel, Duel, Champion, Purgation, Ordeal,* &c. *Paine fort & duret, Rack, Torture,* &c. 5°, Judgment; whence *Arrest,* &c. 6°, Execution; whence *Scire facias, Reprieve,* &c.

[16] THEOLOGY, or the Consideration of GOD: his Nature and *Attributes,* as *Eternity, Ubiquity,* &c. His *Unity, Trinity,* &c. *Persons, Hypostasis,* &c. Our Duty to him, discover'd by *Inspiration, Revelation, Prophecy,* &c. by the *Messiah, Evangelists, Apostles,* &c. In the Bible, *Pentateuch, Hagiographa, Psalter, Gospel, Apocalypse,* &c. *Canon, Deuterocanonical, Apocrypha,* &c. Circumstances thereof, *Style, Allegory, Type, Parable, Mystical,* &c. *Text, Version, Septuagint, Vulgate,* &c. *Paraphrase, Targum,* &c. *Points, Quotations,* &c. Matter thereof; Declarations, of *Incarnation, Passion, Crucifixion, Miracle,* &c. Injunctions, as *Worship, Prayer, Sacrifice,* &c. Sacraments, as *Eucharist, Baptism,* &c. Promises, as *Grace, Justification,* &c. Decrees, as *Predestination, Election, Reprobation,* &c. Breaches on our Part, *Sin, Apostacy, Imputation,* &c. Remedies thereof, by *Repentance, Confession,* &c. Rewards and Punishments allotted thereto, *Heaven, Hell, Resurrection, Immortality,* &c. His Ministers, *Angels, Devil,* &c. His Church, either *Triumphant,* as *Saints, Martyrs, Confessors, Fathers, Doctors,* &c. or *Militant,* &c. Its Offices, *Creed, Liturgy, Decalogue, Doxology, Trisagion,* &c. Discipline, Rites, &c. as *Absolution, Anathema, Excommunication,* &c. *Catechumen, Confirmation, Genuflexion,* &c. Its Priesthood, as *Bishop, Priest, Deacon,* &c. *Patriarch, Archbishop, Primate, Dean, Canon, Prebend, Archdeacon, Chantor,* &c. Their Ensigns, *Mitre, Crozier, Pallium,* &c. Their *Ordination, Consecration, Collation, Imposition,* &c. *Benefices, Revenues, Tithes,* &c. Places set apart, as *Church, Chapel, Oratory,* &c. *Cathedral, Parochial, Cardinal,* &c. *Choir, Nave, Altar, Font,* &c. *Diocese, Province,* &c. Assemblies, as *Synod, Council, Convocation, Consistory, Chapter, Presbytery,* &c. *Feasts, Fasts, Lent, Vigils,* &c. *Easter, Epiphany, Pentecost, Annunciation, Purification, Presentation,* &c.——Particular Systems or Professions thereof, *viz. Reform'd* or Protestant, as the *Church of England, Lutheranism, Calvinism,* &c. Romish or *Latin*; its *Mass, Breviary, Legend,* &c. *Transubstantiation, Extreme Unction, Supererogation, Penance,* &c. *Hierarchy*; *Pope, Cardinal,* &c. *Secular, Regular, Monk, Religious, Abbot, Prior,* &c. *Order, Congregation, Monastery, General,* &c. *Jesuit, Carthusian, Carmelite, Franciscan, Dominican,* &c. *Third* Order, *Cenobite, Anchorite, Hermit, Recluse, Monastery, Cell,* &c. *Rule, Vow, Reform, Noviciate,* &c. *Image, Relicks, Saint, Virgin, Rosary,* &c. *Canonization, Beatification,* &c. *Indulgence, Jubilee, Exorcism,* &c.——Greek, its *Anthologue, Prothesis, Particles,* &c. *Maronite, Jacobite, Thomæan,* &c. *Armenian, Cophti, Solitary,* &c.——Sects, and Heresies; as *Manichees, Gnostics, Arians,* &c. *Ebionites, Nestorians, Millenaries, Quartodecimans,* &c. *Montanists, Socinians, Arminians,* &c. *Presbyterians, Anabaptists, Independents, Quakers,* &c. *Quietists, Servetists, Pre-adamites,* &c. *Deist, Atheist, Spinosism,* &c.——Jewish, its *Talmud, Tradition,* &c. *Temple, Tabernacle, Sanctuary, Ark,* &c. *Pontiff, Levite, Tribe,* &c. *Ephod, Theraphim, Circumcision, Sabbath, Sanhedrim,* &c. *Rabbin, Doctor, Cabbala, Massora,* &c. *Pharisee, Sadducee, Essean, Caraite,* &c. *Nazarite, Therapeuta,* &c. *Samaritan, Dosithean, Hellenist,* &c. *Passover, Scenopegia, Gehenna,* &c.——Mahometan; Their *Alcoran, Mufti, Dervice, Mosque, Mussulman,* &c.——Heathen; Their *Idolatry, Theogony,* &c. Their Gods; *Penates, Lares, Lemures,* &c. *Panes, Sylvans, Nymphs, Tritons,* &c. *Demi-god, Hero, Fortune, Destiny, Dæmon, Genius,* &c. *Apotheosis, Sacrifice,* &c. *Feast, Lustration,* &c. as *Eleusinia, Saturnalia, Cerealia,* &c. Ministers thereof; *Rex, Pontifex, Flamen, Vestal, Corybantes,* &c. Games; *Olympic, Isthmean,* &c. *Divination, Oracle, Pythian, Sibyl,* &c. *Augur, Auspex,* &c. *Temple, Fane, Pagod,* &c. Sects; as *Banians, Bramans, Sabæans,* &c.

[17] LOGICS, or the Consideration of IDEAS or NOTIONS; Their Kinds, *Simple, Complex, Adequate,* &c. Disposition, into *Classes* or *Categories, Predicaments, Predicates,* &c. Their Composition, or Association into *Axioms, Propositions, Problems, Theorems, Theses, Hypotheses.* Arguments, as *Syllogism, Enthymeme, Sorites, Sophism, Dilemma, Crocodilus,* &c. Their Resolution, *Definition, Division,* &c. into *Premisses, Consequences, Terms,* &c. Their *Truth, Falshood, Evidence, Demonstration,* &c. Operations therewith, as *Argumentation, Induction, Discoursing, Philosophizing,* &c. *Disputation, Distinction, Contradiction, Reductio ad absurdum,* &c.

[18] CHYMISTRY, including the Use of FIRE, *Water, Baths, Ferments, Menstruums, Furnaces, Retorts,* and other Instruments; to change *Animal, Vegetable,* and *Fossil* Bodies; by inducing *Fusion, Putrefaction, Fermentation, Dissolution, Exhalation,* &c. and hereby procuring *Spirits, Salts, Oils. Acid, Alcaline, Aromatic, Urinous. Wines, Vinegars, Flowers, Calces, Crystals, Soaps, Tartars. Regulus, Magistery, Extract, Elixir. Cerus, Minium, Litharge. Quintessence, Phosphorus, Alcahest, Philosopher's Stone,* and the like; by the Operations of *Distillation, Expression, Cohobation, Sublimation, Rectification, Crystillization, Calcination, Amalgamation, Digestion, Precipitation, Vitrification, Fixation, Transmutation,* and the like.——*Arbor Dianæ, Aurum Fulminans, Artificial Earthquake, Magic, Divination,* &c.

[19] OPTICS, including the Laws and Consideration of VISION, and *Visible Objects*; effected by means of *Light,* its *Rays.* Their *Refrangibility, Reflexibility,* &c. *Focus, Transparency, Opacity, Shadow,* &c. ——Reflection thereof, in *Mirror, Looking-glass, Catoptric Cistula,* &c.——Refraction, in *Lens, Prism, Glass,* &c. Application, in *Telescope, Microscope, Magic Lanthorn,* &c. *Spectacle, Polemoscope, Polyhedron, Camera Obscura,* &c.

[20] PERSPECTIVE, or the PROJECTION of *Points, Lines, Planes,* &c. in *Scenography, Orthography, Ichnography, Anamorphosis,* &c.

[21] PAINTING, or the DESIGNING of Objects in *Clair-obscure, Proportion,* &c. with *Ordonnance, Expression,* &c. Circumstances hereof, *Attitude, Contrast, Group,* &c. Kinds, *Limning, Miniature, Camieux, Fresco,* &c. *Enamelling, Mosaic,* &c.

[22] PHONICS, or the Doctrine of SOUNDS, *Voice,* &c. Their Modifications in *Echo, Resonance, Whispering-Place, Speaking-Trumpet,* &c.——Their Tune, *Gravity, Interval,* &c. Time, *Triple,* &c. express'd by *Note, Chord,* &c. Comparisons thereof, *Concord,* as *Unison, Octave, Third, Fourth, Discord,* &c. Composition, as *Melody, Harmony, Counter-point. Symphony, Synaulia, Chime, Song, Rhythmus,* &c. Kinds, *Genera, Mode,* &c. Circumstances, *Key, Cleff, Signature, Transposition,* &c. *Staff, Scale, Gammut, Solfaing, Modulation,* &c. Instruments, *Organ, Bell, Trumpet, Lyre, Cymbal, Violin, Harpsichord,* &c.

[23] HYDROSTATICS, or the Consideration of FLUIDS; their *Specific Gravity, Density, Equilibrium,* &c. Instruments to measure the same, as *Areometer, Hydrostatical Balance,* &c. *Syphon, Torricellian,* &c.——Motion thereof, in *Pump, Fountain, Spiral Screw, Hydrocanisterium, Hydromantic,* &c.

[24] PNEUMATICS, or the Consideration of the AIR; its *Weight, Density, Pressure, Elasticity,* &c. *Condensation, Rarefaction, Motion, Wind,* &c. In *Air-pump, Suction, Vacuum,* &c. Measur'd by *Barometer, Thermometer, Hygrometer, Manometer,* &c. *Anemometer, Windmill,* &c.

[25] MECHANICS, including the Structure and Contrivance of MACHINES. as *Balance, Steelyard, Pully, Polyspast,* &c. *Wheel, Clock, Watch, Pendulum, Spring, Fusee,* &c. *Clepsydra, Coach, Rota Aristotelica, Perpetual Motion,* &c. *Mill, Press, Vice, Lath, Loom, Windlass,* &c. Operations of *Swimming, Diving, Flying,* &c.

[26] ARCHI-

ples, antecedent to such Intervention of ours; and even pursue it up to its Cause, and shew how it exists there, before it be Knowledge: And to trace the Progress of the Mind thro' the Whole, and the Order of the Modifications induced by it. This is a Desideratum, hitherto scarce attempted; but which we could not here decline entering upon, on account of its immediate Relation to the present Design. 'Tis the Basis of all Learning in general; the great, but obscure Hinge, on which the whole Encyclopædia turns.

TO

26 ARCHITECTURE, including the Construction of BUILDINGS; as *House, Temple, Church, Hall, Palace, Theatre,* &c. *Ship, Galley, Galleon, Ark, Buccentaur, Boat,* &c. *Pyramid, Mausoleum, Pantheon,* &c. *Capitol, Seraglio, Escurial,* &c. *Arch, Vault, Bridge, Monument, Tomb,* &c. Forms thereof, *Rotondo, Platform, Pinnacle,* &c. Plans, *Design, Ichnography, Profile,* &c. Parts, as *Foundation, Wall, Roof,* &c. *Door, Window, Stairs, Chimney,* &c. Orders, as *Tuscan, Doric, Corinthian,* &c. *Caryatides, Rustic, Gothic,* &c. Column, *Pilaster, Attic,* &c. Parts thereof, *Entablature, Capital, Pedestal,* &c. *Cornice, Frieze, Base,* &c. *Volute, Pediment, Modillion, Console,* &c. Mouldings, *Ogee, Tore, Astragal, Scotia. Abacus, Ovolo,* &c. Materials, as *Brick, Stone, Tyle, Slate, Shingle,* &c. *Timber, Wainscot, Glass, Lead, Plaster,* &c. *Beam, Rafter, Mortar, Nail, Hinge, Key, Lock,* &c. *Quarry, Masonry,* &c.

27 SCULPTURE, or the framing of *Statue, Figure, Ornament,* &c. in *Relievo, Creux,* &c. as *Carving, Pottery, Porcelain,* &c. Engraving, *Seal, Dye,* &c. *Etching, Cutting. Mezzo Tinto,* &c. Foundery, of *Bell, Letter, Ordnance,* &c. Coining, *Money, Medal, Medallion,* &c. *Pile, Legend,* &c. *Lapidary, Turnery, Inlaying, Vaneering, Damasqueening, Enchasing,* &c.

28 TRADES and MANUFACTURES; as *Printing, Paper-making, Book-binding,* &c. *Gilding, Japanning, Glass-making. Grinding,* &c. *Plumbery, Glaziery, Forging, Hammering,* &c. *Weaving, Bleaching, Whitening,* &c. *Fulling, Dying, Pressing, Sheering, Calendring, Tabying, Freezing,* &c. *Woollen, Silk, Linum Incombustibile,* &c. *Cloth, Serge, Taffety, Stocking,* &c. *Velvet, Tapistry, Hat,* &c. *Tanning, Currying, Tawing,* &c. *Chamoising, Chagreen, Marroquin,* &c. Making *Parchment, Glue. Gun-pouder, Smalt, Soap, Starch,* &c. *Candle, Taper, Torch,* &c. *Steel, Button, Pin, Needle, Pipe, Fan, Peruke,* &c.

29 PYROTECHNY, or *Artificial* FIRE-*Work*; including the Consideration and Use of *Gun-pouder, Match, Fusee,* &c. Of *Ordnance, Cannon, Gun, Mortar,* &c. *Carriage, Charge, Projection, Range, Point-blank, Recoil,* &c. *Petard, Carcass, Shot, Bomb, Granado,* &c. *Rocket, Star,* &c.

30 MILITARY *Art,* including the Consideration of ARMIES, *Fleets, Cavalry, Infantry,* &c. Consisting of *Regiments, Troops, Companies, Phalanx, Legion,* &c. Soldiers, *Dragoon, Grenadier, Fusileer, Cuirassier, Archer, Janisary, Spahi, Velites, Argyraspides, Gend'armery,* &c. Divided into *Squadron, Battalion, Brigade,* &c. Commanded by *General, Marshal, Bashaw, Admiral,* &c. *Lieutenant, Brigadier, Colonel, Captain, Serjeant. Major, Adjutant, Ensign, Quarter-Master. Tribune, Centurion, Primipilus,* &c. In *Battle, Siege, March, Camp,* &c. Ranged in *Line, Column,* &c. Motions, *Attack, Retreat, Halt,* &c. Evolutions, *Wheeling, Counter-wheeling,* &c. Signals, *Word, Drum, Chamade,* &c. Guards, *Garison, Piquet, Patroll, Round, Quarter, Place of Arms,* &c. *Standard, Banner, Eagle, Labarum,* &c. Their Arms, *Artillery, Carabine, Musquet,* &c. *Helmet, Buckler, Pelta, Cuirass,* &c. *Aries, Balista, Catapulta, Fundus,* &c.

31 FORTIFICATION, or the Construction of FORTRESSES; as *Citadel, Castle, Tower,* &c. *Fort, Star, Redoubt,* &c. Works, or Parts thereof, *Rampart, Bastion, Ditch, Counterscarp, Curtain,* &c. *Ravelin, Horn-work, Crown-work,* &c. Approaches, *Trench, Sap, Mine,* &c. *Line, Parallel, Circumvallation,* &c. *Battery, Attack,* &c.

32 ASTRONOMY, or the Doctrine of the HEAVENS; Their *Circles, Ecliptic, Zodiack, Meridian, Equator, Vertical, Azimuth. Galaxy,* &c. Points, as *Pole, Zenith, Nadir,* &c. Celestial *Bodies,* viz. *Stars, Sun,* &c. Assemblage thereof, into *Sign, Constellation,* &c. Their Precession, *Culmination, Refraction. Declination, Ascension, Longitude, Latitude. Altitude, Amplitude, Azimuth.* Planets, as *Saturn, Venus, Earth. Moon, Satellite, Comet,* &c. Their *Places, Aspects, Syzygy, Conjunction, Quadrature. Diameter, Distance, Period, Revolution, Orbit, Node,* &c. Their *Station, Retrogradation, Equation,* &c. Their *Phases, Eclipse, Penumbra, Occultation, Parallax, Crepusculum, Maculæ,* &c. Observations thereof, taken with the *Quadrant, Gnomon, Micrometer, Reticula,* &c. Collected in *Catalogue, Tables,* &c. Hypotheses, or Systems thereof, *Copernican, Tychonic, Ptolemaic,* &c. Exhibited in *Sphere, Globe,* &c.

33 CHRONOLOGY, or the Doctrine of TIME; measur'd by *Year, Month, Week, Day, Hour. Age, Period, Cycle,* &c. Commencing from *Epocha, Creation, Hegira,* &c. Laid down in *Fasti, Almanack, Calendar, Julian, Gregorian,* &c. Accommodated to *Feasts, Feriæ, Easter,* &c. by means of *Epact, Golden Number, Dominical,* &c.

34 DIALLING, including the *Furniture* and Projection of DIALS, *Horizontal, Declining, Reclining, Deinclining,* &c. *Moon-Dial, Ring-Dial, Horodictical,* &c. Instruments, as *Declinator, Analemma, Scales,* &c.

35 GEOGRAPHY, including the Doctrine of the EARTH, or GLOBE: its *Circles; Parallel, Tropic, Horizon, Axis, Poles,* &c. Its *Zones, Climates,* &c. Its *Places*; their *Longitude, Latitude, Distance, Elevation,* &c. Inhabitants, *Antipodes, Aborigines, Troglodites, Ascii, Perisii,* &c. Instruments relating thereto, *Globe, Map,* &c.

36 NAVIGATION, or the Consideration of SAILING; in *Ship, Frigate, Bark,* &c. Parts thereof, *Mast, Anchor, Sails, Yards, Cordage, Capstan, Rudder, Deck,* &c. Their *Course, Rhumb,* &c. shewn by *Compass, Needle, Variation,* &c. Directed by *Steerage, Current,* &c. Distance or *Reckoning,* by *Log, Observation, Longitude, Latitude,* &c. Taken by *Fore-staff, Back-staff, Astrolabe, Nocturnal. Sinical Quadrant,* &c. Wrought by *Gunter, Chart, Mercator, Traverse,* &c. The Operations of *Sounding, Weighing, Careening.* Signals, *Buoy,* &c.

37 COMMERCE, or the Affairs of MERCHANDIZE; including, Money, *Coin, Species,* &c. as *Pound, Crown, Shilling, Penny, Sterling. Ducat, Dollar, Piece of Eight. Talent, Sesterce, Shekel,* and the like. Weights, *Libra, Ounce,* &c. Measures, *Foot, Yard, Standard,* &c. Given in *Exchange, Truck, Permutation, Commutation,* &c. for *Manufacture, Spice, Drug, Woollen, Slave, Negro,* &c. *Imported, Exported, Transported, Convoy, Flota,* &c. Conditions thereof, *Tariff, Contraband, Charter-party, Freight, Average,* &c. *Customs, Duty, Tunnage, Poundage,* &c. *Bottomry, Assurance, Pike,* &c. Transacted by *Company*; as *Hans, Steel-yard, East India, Turky, Hamburg, Mississippi, South Sea, Assiento, Register. Colony, Fishery, Factory,* &c. At *Staple, Fair, Market, Bank, Burse,* &c. By *Commission, Factor, Broker,* &c. *Weighing,* paying by *Bill*; at *Usance, Acceptance, Par. Protest, Discount, Rechange,* &c. *Action, Subscription. Book-keeping,* &c.

38 ANATOMY, or the *Analysis* of ANIMAL BODIES, and their PARTS, *viz.* Bones, as *Cranium, Rib, Vertebra, Radius, Femur, Tibia. Sacrum, Pubis, Patella,* &c. Their *Articulation, Apophyses,* &c. Muscles, *Abductor, Adductor, Erector, Depressor, Deltoides, Sartorius, Cucullaris, Orbicularis, Sphincter,* &c. Their *Tendons, Fibres,* &c. Vessels, as *Artery, Aorta, Aspera, Trachea, Pulmonary,* &c. *Veins,* as *Cava, Porta, Jugular, Carotid,* &c. *Glands,* as *Pancreas, Parotides, Prostates,* &c. *Nerves; Optic, Olfactory, Auditory,* &c. *Lymphatic, Lacteal, Mesaraic, Mucilaginous,* &c. Their *Valves, Tunics, Anastomases,* &c. Their Humours, as *Chyle, Blood, Spirit, Seed, Gall, Urine, Milk, Sweat, Marrow,* &c. Membranes; *Pannicle, Cutis, Cuticula, Papilla,* &c. *Venters, Head, Meninges, Brain,* &c. *Eye, Ear, Pupil, Tympanum. Tongue, Teeth, Palate, Larynx, Glottis, Oesophagus,* &c. Viscera, *Stomach, Lungs, Heart,* &c. *Liver, Spleen, Kidney, Intestines, Bladder,* &c. Functions or Operations hereof, *Respiration, Deglutition, Digestion, Chylification, Sanguification, Circulation, Systole, Nutrition. Secretion, Excretion, Perspiration, Vomiting,* &c. Genitals, *Penis, Testicle, Clitoris, Matrix, Nympha, Hymen. Embryo, Zoophyte, Mole,* &c. *Erection, Generation, Conception, Gestation. Delivery, Lochia, Menses,* &c.

39 MEDICINE, including the Consideration of LIFE and HEALTH; Conditions thereof, *Longevity, Strength, Temperament,* &c. Means, as *Food, Drink, Exercise,* &c. Opposites, as *Death, Disease,* &c. Kinds hereof, *Chronic, Epidemic, Contagious,* &c. as *Plague, Fever, Gout, Apoplexy, Epilepsy, Palsy. Pox, Polypus, Palpitation. Madness, Hydrophobia, Spasm, Hypochondriac. Phthisis, Scorbutus, Dropsy, Tympanites. Lepra, Itch, Plica, Ophthalmia, Gutta, Cataract,* and the like. *Wound, Ulcer, Cancer. Fracture, Fissure, Caries,* and the like. Symptoms, *Sign, Diagnostic, Pulse, Urine,* &c. *Prescription, Crisis, Cure,* &c. *Regimen, Diet, Medicine,* &c. Kinds hereof, *Specific, Purgative, Emetic, Diaphoretic, Diuretic, Alterative. Styptic, Astringent, Emollient, Opiate. Absorbent, Caustic, Anodyne, Sympathetic. Cardiac, Cephalic, Febrifuge. Antimonial, Chalybeat, Mercurial,* and the like. Operations, as *Evacuation, Phlebotomy, Suture, Lithotomy, Amputation, Inoculation. Salivation, Couching, Cupping, Trepanning. Touching, Tapping, Stroking, Transfusion, Castration, Circumcision,* and the like.

40 PHARMACY, or the *Preparation* and *Composition* of REMEDIES; as *Mithridate, Treacle, Hiera Picra, Laudanum, Diasenna, Turbith, Calomel,* &c. in the Form of *Electuary, Confection, Extract, Tincture, Syrup. Troche, Pill, Pouder, Lohoc, Potion, Apazem, Drops,* medicated *Ales, Wines, Waters. Unguent, Emplaster, Purge, Clyster, Suppository, Pessary, Collyrium,* &c. From *Drugs,* or *Simples*; as, *Guaiacum, Sassafras, Colocynthis, Crocus, Rhubarb, Cassia, Senna, Cortex, Styrax, Jalap, Scammony, Opium,* &c. *Fats, Claws, Horns,* &c. of *Viper, Crab, Elk,* &c. *Cantharides, Millepedes, Mummy, Usnea, Ichthyocolla,* &c. *Antimony, Orpiment, Asphaltus, Bismuth, Marcasite, Bole, Cinnabar, Mars, Venus,* &c.

41 AGRICULTURE, or the *Tillage* and Improvement of SOILS, *Clay, Sand, Earth,* &c. By the Operations of *Ploughing, Fallowing, Burning, Sembradore, Sowing, Manuring,* &c. To produce, *Corn, Hemp, Flax, Liquorice, Saffron,* &c. For *Malt, Bread,* &c. *Granary, Threshing,* &c. The Culture of *Trees, Timber,* &c. by *Planting, Lopping, Barking,* &c. For *Coppice, Park, Paddock, Hedge, Pasture,* &c.

42 GARDENING, including the *Culture* of HERBS, *Flowers, Fruits,* &c. as *Dwarf, Standard, Stone, Wall, Espalier, Sallad,* &c.

TO be a little more explicit---*Words* are the next Matter of Knowledge; I mean, of Knowledge conſider'd as it now ſtands, communicable, or capable of being tranſmitted from one to another. We ſhould have known many Things without Language; but it would only have been ſuch Things as we had ſeen or perceived our ſelves. The Obſervations of others could no way have been added to our own; but every Individual muſt have gone thro' a Courſe for himſelf, excluſive of all Advantages to, or from, Cotemporaries, Predeceſſors, or Poſterity.-----'Tis evident that, in this Caſe, nothing like an *Art*, or *Science*, could ever have aroſe; not even in the Mind of the moſt ſagacious Obſerver: The little Syſtem of Things which come immediately in one Man's way, wou'd but have afforded a ſlender Stock of Knowledge; eſpecially to a Being whoſe Views were all to terminate in himſelf. Add, that, as the chief Occaſions of his Obſervation would be of the ſame kind with thoſe of other Animals; 'tis probable his Knowledge would not have been very different, whether we conſider its Quantity or Quality. 'Tis confeſs'd that all our Knowledge, in its Origin, is no other than Senſe; whence it ſhould follow, that one Being has no natural Advantage over another in its Diſpoſition for Knowledge, other than what it has in the ſuperior Number, Extent, or Acuteneſs of its Senſes.

'TIS, in effect, to Language that we are chiefly indebted for what we call *Science*. By means hereof our Ideas and Notices, tho things in their own nature merely perſonal, and adapted only to private uſe; are extended to others, to improve their ſtock: and thus, by a kind of ſecond Senſe, we get Perceptions of the Objects that are perceived by all Mankind; and are preſent, as it were by proxy, to things at all Diſtances from us: We hear Sounds made a thouſand Years ago, and ſee Things that paſs a thouſand Miles off. If the Eagle really ſees, the Raven ſmells, and the Hare hears, further and better than Man; their Senſe, at beſt, is but narrow, in compariſon of ours, which is extended, by the Artifice of Language, over the whole Globe. They ſee with their own Eyes only; we with thoſe of the whole Species.---In effect, by Language, we are upon much the ſame footing, in reſpect of Knowledge, as if each individual had the natural Senſe of a thouſand: an Acceſſion which alone muſt have ſet us far above any other Animals. But at the ſame time, this very acceſſion of a multitude of Ideas more than naturally belong'd to us, muſt have been in great meaſure uſeleſs; without certain other Faculties of ordering and arranging 'em; of abſtracting, or making one a Repreſentative of a Number; of comparing 'em together, in order to learn their Relations; and of compounding, combining 'em, *&c.* to make 'em act jointly. The Effect hereof is what we call *Diſcourſing* and *Philoſophizing:* And hence ariſe *Doctrines*, *Theories*, &c.

EVERY Word is ſuppoſed to ſtand for ſome Part, or Point of Knowledge; ſuch as do not, have no buſineſs in the Language, and ought of Conſequence to be thrown out of doors. It follows, that the Vocabulary of any Language, is repreſentative of the ſeveral Notices of the People among whom it obtains: I mean of the primary or abſolute Notices; for by the Conſtruction of theſe Words with one another, a new Set of ſecundary or relative Notices are expreſs'd.---To enter better into this, it is to be obſerv'd, that the ſeveral Objects of our Senſes, with that other Set of Things analogous hereto, the proper Objects of the Imagination, are repreſented by fixed Names *; denoting, ſome of 'em, Individuals †; others, Kinds ‡, *&c.* Now, theſe, which make the firſt or fundamental Part of a Language, 'tis obvious, are no other than a Repreſentation of the Works of Nature, as they exiſt in a kind of ſtill Life, or in a State of Independency one upon another. But in regard we do not conſider the Creation as thus quieſcent, but obſerve a great number of Mutations ariſe in the Things we are converſant among; we are hence put under a neceſſity of framing another Set of Words, to expreſs theſe Variations, and the Actions to which they are owing, with the ſeveral Circumſtances and Modifications thereof ‖. By this means, Nature is remov'd out of her dormant Conſtitution, and ſhewn in Action; and thus may occaſional Deſcriptions be framed, accommodate to the preſent State of Things.

HENCE ariſe two Kinds of Knowledge; the one *abſolute*, including the ſtanding Phænomena: the other *relative*, or *occaſional*, including what is done, or paſſes, with regard to them. The former is in ſome Senſe permanent; the latter merely tranſient, or hiſtorical. The firſt is held forth, as already obſerved, in the Vocabulary: the ſecond vague, and uncircumſcrib'd by any Bounds; being what fills all the other Books extant. In effect, this laſt, being in ſome meaſure caſual, may be ſaid to be infinite: for that every new Caſe, *i. e.* every new Application and Combination of the former, furniſhes a new Acceſſion.

IN the wide Field of Knowledge, appear ſome Parts which have been more cultivated than the reſt; either on account of the Goodneſs of the Soil, and its eaſy Tillage, or by reaſon they have fallen under the Hands of induſtrious and able Husbandmen. Theſe Spots, being regularly laid out and planted, and conveniently circumſcrib'd or fenced round, make what we call the *Arts*, and *Sciences:* And to theſe have the Labours, and Endeavours of the Men of Curioſity and Learning in all Ages, been chiefly confin'd. Their Bounds have been enlarg'd from time to time, and new Acquiſitions made from the adjoining Waſte; but ſtill the Space

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The Operations of *Planting*, *Tranſplanting*, *Replanting*, *Watering*. *Engrafting*, *Inoculating*, *Pruning*, *Pinching*, *Variegating*, &c. Preventing *Diſeaſes*, *Blights*, *Gum*, &c. The Uſe and Ordering of a *Hot-bed*, *Green-houſe*, *Seminary*, *Nurſery*, *Garden*, *Vineyard*, &c. Their *Expoſure*, *Walls*, *Horizontal Shelter*, &c. *Walks*, *Graſs-Plot*, *Terrace*, *Quincunx*, *Parterre*, &c.

43 MANAGE, including the Conſideration of HORSES; their *Age*, *Colour*, *Teeth*, *Hoof*, *Star*, &c. Paces, as *Amble*, *Gallop*, &c. Airs, as *Volt*, *Demivolt*, *Curvet*, *Capriole*, &c. *Aid*, *Correction*, *Hand*, *Bit*, &c. *Saddle*, *Shoe*, *Bridle*, &c. Diſeaſes, as *Halting*, *Farcy*, *Staggers*, *Scratches*, *Yellows*, &c. Operations, as *Rowelling*, *Docking*, *Gelding*, &c.——Hawk, *Hawking*, *Hood*, &c. *Reclaiming*, *Caſting*, &c. *Pip*, *Filanders*, &c.——Hound, *Hunting*, &c. *Rut*, *Stalking*, *Birdlime*, *Tramel-net*, *Bat-fowling*, &c.——Fiſh, *Fiſhing*, *Fiſhery*, &c. *Angling*, *Hook*, *Rod*, *Float*, &c. *Bait*, *Fly*, *Huxing*, &c.

44 GRAMMAR, or the Conſideration of LANGUAGE; as *Engliſh*, *Latin*, *Greek*, *Hebrew*, *French*, &c. Their *Dialect*, *Idiom*, *Patavinity*, &c. Matter thereof, *Letter*; *Vowel*, *Conſonant*, *Diphthong*, *Aſpirate*, *Character*, *Symbol*, *Hieroglyphic*, &c. *Syllable*, *Particle*, &c. *Word*; Kinds hereof, *Noun*, *Pronoun*, *Verb*, &c. *Subſtantive*, *Adjective*, &c. Their *Conſtruction*, *Concord*, *Regimen*, &c. In *Caſe*, *Nominative*, *Genitive*, &c. *Gender*, *Maſculine*, &c. *Number*, *Perſon*, *Mood*, *Tenſe*, &c. Into *Sentence*, *Phraſe*, *Period*, &c. Diſtinguiſh'd by *Point*, *Accent*, *Comma*, &c. Deliver'd by *Pronunciation*, *Writing*, *Orthography*, &c.

45 RHETORIC, or the Means of PERSUASION; as Invention, *Amplification*, *Topic*, *Place*, *Argument*. *Paſſions*, *Manners*, &c. Diſpoſition, *Exordium*, *Narration*, *Confirmation*, *Peroration*, &c. *Elocution*, *Sublime*, *Style*, *Numbers*, &c. Figures, as *Exclamation*, *Pleonaſm*, *Epiphonema*, *Apoſtrophe*, *Proſopopœia*, *Antitheſis*, &c. Tropes, as *Metaphor*, *Allegory*, *Synecdoche*, *Sarcaſm*, *Hyperbole*, *Catachreſis*, &c. Action, *Geſture*, *Monotonia*, &c. Compoſitions, as *Oration*, *Declamation*, *Panegyric*, &c. *Parable*, *Eſſay*, *Dialogue*, *Hiſtory*, &c.

46 HERALDRY, or the Conſideration of COATS; conſiſting of *Field*, *Charge*, *Figure*, &c. as *Croſs*, *Chevron*, *Bend*, *Pale*, &c. with *Abatement*, *Difference*, *Quartering*, &c. Compoſed of *Colour*, *Metals*, *Points*, &c. Bore on *Eſcutcheon*, *Shield*, &c. Accompanied with *Supporters*, *Helmet*, *Creſt*, *Mantling*, *Motto*, &c. *Device*, *Emblem*, *Rebus*, *Enigma*, &c. And deſcribed by *Blazon*.

47 POETRY, including the Conſideration of VERSE; its *Meaſure*, *Feet*, *Quantity*, &c. as *Hexameter*, *Alexandrine*, *Spondee*, *Iambic*, &c. *Rhyme*, *Stanza*, &c. Compoſitions, as *Epigram*, *Elegy*, *Song*, *Madrigal*, *Hymn*, *Ode*, *Pindaric*, &c. *Eclogue*, *Satire*, *Georgic*, &c. *Anagram*, *Acroſtic*, *Burleſque*, *Macaronic*, *Leonine*, *Troubadour*, &c. Dramatic, as *Tragedy*, *Comedy*, *Hilaro-tragedia*, *Farce*, &c. Parts thereof, *Act*, *Scene*, *Protaſis*, *Epitaſis*, *Cataſtrophe*, &c. Circumſtances, *Prologue*, *Epilogue*, *Soliloquy*, *Chorus*, &c. Laws, *Unity*, *Action*, &c. Epic, its *Fable*, *Hero*, *Machines*, &c. *Characters*, *Manners*, *Sentiments*, &c. *Perſonification*, *Propoſition*, *Invocation*, *Epiſode*, &c. *Iliad*, *Odyſſee*, *Rhapſody*, &c.

* *Nouns.* † *Proper Names.* ‡ *Appellatives.* ‖ *Verbs*, *Participles*, *Adverbs*, &c.

of Ground they poſſeſs is but narrow; and there is room either to extend 'em vaſtly, or to lay out new ones. They ſhew like the *Cyclades* at a diſtance: *Apparent rari nantes in Gurgite vaſto.*

THEY were divided, or canton'd out by their firſt Diſcoverers, into a number of Provinces, under diſtinct Names; and have thus remain'd for time immemorial, with little Alteration. And yet this Diſtribution of the Land of Science, like that of the Face of the Earth or Heavens, is wholly arbitrary and occaſional; and might eaſily be broke thro', and alter'd, and perhaps not without advantage. Had not *Alexander* and *Cæſar* liv'd, the Diviſion of the Globe had doubtleſs been very different from what we now find it; and the Caſe would have been the ſame with the World of Learning, had no ſuch Perſon been born as *Ariſtotle*. The firſt Diviſions of Knowledge were as ſcanty and ill concerted as thoſe of the firſt Geographers; and for the like Reaſon: And tho future *Columbus's* and *Bacon's*, by opening new Tracts, have carried our Knowledge a great way further; yet the Regard we bear to the antient Adventurers, and the eſtabliſhed Diviſion, has made us take up with it, under all its Inconveniencies, and ſtrain and ſtretch things, to make our Diſcoveries quadrate thereto. I do not know whether it might not be more for the general Intereſt of Learning, to have all the Incloſures and Partitions thrown down, and the whole laid in common again, under one undiſtinguiſh'd Name. Our Inquiries, in ſuch caſe, would not be confin'd to ſo narrow a Channel; but we ſhould be led to explore, and purſue many a rich Mine and Vein, now doom'd to lie neglected, becauſe out of the way.

ART and *Science* are indeed two Words of familiar Uſe, and great importance; but, I doubt little underſtood. The Philoſophers have long labour'd to explain and aſcertain their Notion and Difference; but all their Explanation amounts to little more than the ſubſtituting one obſcure Notion for another. Their Attempts uſually terminate in ſome barren Definition, which rather caſts Obſcurity than Light on the Subject. Nor is the Reaſon far to ſeek, however it may have eſcap'd Notice; but evidently lies in an Abuſe of Language, whereby thoſe different Words come to be applied to Things of the ſame Nature; and each of 'em in their turn to Things wholly different. Whence, any Definition that can hold of 'em univerſally, muſt needs be very abſtracted, and general; and may hold of almoſt any thing elſe; and of conſequence can expreſs very little of the Eſſence, and obvious Phænomena thereof: To come at which, we muſt be at the Pains of a new Inveſtigation.

TO *SCIENCE*, then, belong ſuch Things as Men may diſcover by the uſe of Reaſoning, and Senſe: Whatever the Mind deſcries in virtue of that Faculty whereby we perceive Things, and their Relations, is matter of Science: Such are the Laws of Nature, the Affections of Bodies, the Rules and Canons of Right and Wrong, Truth and Error, the Properties of Lines and Numbers, *&c.* *Science*, in effect, is the Reſult of mere Reaſon and Senſe in their general or natural State, as imparted to all Men; and not modified, or circumſtantiated by any thing peculiar in the Make of a Man's Mind, the Objects he has been converſant among, or the Ideas he has preſent to him. Conſequently, Science is no other than a Series of Deductions, or Concluſions which every Perſon, endued with thoſe Faculties, muſt, with a proper degree of Attention, ſee, nay and draw: And A SCIENCE, *i. e.* a form'd Science, is no more than a Syſtem of ſuch Concluſions, relating to ſome one Subject, orderly and artfully laid down in Words, to ſave Others the Labour and Expence of making 'em at firſt hand. Thus a Perſon who has all the Ideas expreſs'd in *Euclid's* Definitions, and ſees the immediate Connexion of thoſe in his Axioms; which no Man acquainted with the Language can be ſuppoſed without; has it in his Power, with Attention and Induſtry, to form all the Theorems and Problems that follow: He has nothing to do but to range thoſe Ideas orderly in his Mind, compare 'em together, one by one, in all their Changes, and put down the immediate Relations obſerv'd in the Compariſon, *i. e.* their parity, imparity, *&c.* And after the Relations of each to each are thus got; which make a kind of primary Propoſitions; to proceed to combine 'em, and take down the Relations reſulting from a Compariſon of ſeveral Combinations. By ſuch means, without any other Helps than Penetration and Perſeverance, might he make out an infinite Number of Propoſitions: more by half than *Euclid* has done; there being a new Relation, *i. e.* a new Propoſition, reſulting from every new Combination.

TO *ART*, on the other hand, belong ſuch Things as mere general Reaſon would not have attained to: Things which lie out of the direct Path of Deduction, and which required a peculiar Caſt, or Byaſs of Mind to ſee or arrive at. A Man might call theſe the Reſults of particular, or perſonal Reaſon, in oppoſition to the former; but that ſuch a Denomination would be thought unphiloſophical. It may, perhaps, be more juſt to conſider the Reaſon, here, as modified, or tinctured with ſomething in the Complexion, Humour, or Manner of thinking of the Perſon*; or as reſtrain'd or diverted, out of its proper courſe, by ſome Views, or Notices peculiar to him.----The Difference between Art and Science, amounts to much the ſame as between *Wit* and *Humour*; the former whereof is a general Faculty of exciting agreeable and ſurprizing Pictures in the Imagination †, by the aſſociating of Ideas, which at the ſame time have both a notable Diverſity and a Congruity; and the latter, a particular one: The former is pure and abſolute in its kind; the latter tinged with ſomething foreign and complexional.

'TIS eſſential to *Art*, therefore, as to Humour, to partake of the Perſon from whom it proceeded; and conſequently there are as many Arts, as Inventors of Methods of performing, or doing things. Hence, there is no coming at an Art, otherwiſe than by learning it. A Perſon left to his own Thought, will ſcarce ever hit on the ſame thing, unleſs either we ſuppoſe a marvellous Agreement between the Characters and Circumſtances of the Perſons; or that the Art is in great meaſure ſcientifical, and partakes but little of the Genius and Humour of the Inventor.-----There is no ſuch thing, properly ſpeaking, as ſtudying an Art, or learning a Science: The firſt, every Man beſide the Inventor muſt be taught; the latter, every Man muſt find. In effect, to attain to an Art, there is ſome previous Knowledge requir'd, which a Man's own Reaſon would never have ſuggeſted; whereas a Science requires no more than clear Ideas, and cloſe Attention. With theſe Helps a Man may of himſelf go the whole length of a Science, ſo far as it is properly a Science. Indeed if the Improvers, or rather Writers thereof, have gone a jot out of the common way, in compliance with their own perſonal Views; they have ſo far adulterated the Science, and put it on the footing of an Art. And to this very Cauſe are owing a great part of the Difficulties we meet withal in attaining the Sciences: The reſt ariſe from want of Senſe, *i. e.* of Clearneſs and Preciſion in our Perceptions, and want of Perſeverance and Attention to 'em. Theſe render Geometry it-ſelf, little other than an Art: We want Preliminaries to it as to other Arts. And thus every Science is an Art to ſome People, and only to be attained, as we do mechanic Arts, by Habit, and Remembrance; inſtead of Contemplation and Deduction.-----Reaſon, clogg'd and embaraſs'd by Genius and Complexion, can no more riſe to the heights of Science, than when pure and refin'd, it can deſcend to the depths of Art.

* *Vid.* Boſſu, Traité du Poëme Epique, l. i. c. 1.

† Locke, *on Hum. Underſtand.* Lib. ii. c. 11.

AN Art and a Science, therefore, only differ as leſs and more pure: A *Science* is a Syſtem of Deductions made by Reaſon alone, undetermin'd by any thing foreign or extrinſic to it-ſelf: An *Art*, on the contrary, requires a number of Data and Poſtulata to be furniſh'd from without, and never goes any length, but at every turn it needs new ones. 'Tis the Knowledge or Perception of theſe Data that in one Senſe conſtitutes the Art; the reſt, that is, the doctrinal Part, is of the nature of Science; which attentive Reaſon alone will deſcry.

AN Art, in this light, appears to be a Portion of Science, or general Knowledge, conſider'd, not in it-ſelf, as Science, but with relation to its Circumſtances, or Appendages. In a Science, the Mind looks directly backwards and forwards, to the Premiſes and Concluſions: in an Art we alſo look laterally, to the concomitant Circumſtances. A Science, in effect, is that to an Art, which a Stream running in a direct Channel, without regard to any thing but it-ſelf and its own progreſs; is to the ſame Stream turn'd out of its proper Courſe, and running in a different one diſpos'd into Caſcades, Jets, Ciſterns, Ponds, *&c.* and ſerving to water Gardens, turn Mills, and other particular Purpoſes. In which caſe, the Progreſs of the Stream is not conſidered with regard to it-ſelf, but only as it concerns the Circumſtances of the Works: every one of theſe Works, nay each part thereof, are ſo many Data, which modify the Courſe of the Stream, and vary it from its original Habitude. 'Tis eaſy to trace the Progreſs of the former, from its Riſe to its Iſſue; in regard it flows conſequentially: But a Man ever ſo well acquainted with this, will never be able, of himſelf, to diſcover that of the Second, for want of Acquaintance with the Circumſtances, which his Reaſon can never find out, in regard they depend on the Genius, Humour and Caprice of the Engineer who laid the Deſign.

THESE are ſo many different Characters, or Conditions of Art and Science: But there is a Difference between 'em prior to any of theſe, and of which theſe are only Conſequences. The Origin of 'em all lies higher, in the Principle of Action or Operation above ſpecified; namely, as the Mind is either active or paſſive therein. With regard to this; thoſe Things may be ſaid to belong to *Science* which we only ſee, or perceive; which flow from the Nature and Conſtitution of Things, by the ſole Agency of the Author thereof; ſubſervient only to His general Purpoſes, excluſive of any immediate Agency or Intervention of Ours: And, on the contrary, thoſe Things belong to *Art*, wherein ſuch Science or Perception is further modified and circumſtantiated in our Mind, and directed and applied by us, to particular Purpoſes and Occaſions of our own.-----From hence ariſe the ſeveral Differences abovemention'd: For the Matters of Art are only *Perſonal*, as they are according to the Meaſure of the Artiſt's natural Faculties, in reſpect of Quantity and Degree; and to the Complexion and Caſt of his moral Faculties, in reſpect of their Quality. The Perception, even of Matters of Art, is of the Nature of Science: ſo that thus far the two agree: And their Difference only commences from the ſuperinducing a further Modification, in the Matter of ſuch Perception; and the giving it a new Direction to ſome particular End. By means hereof, it becomes inveſted with a new Set of Conditions and Circumſtances, wholly perſonal; as being all framed and adapted to the particular View and Aim of the Artiſt, (which is the mere Reſult of his particular Diſpoſition, Humour, Manner of thinking, Situation, Occaſion, *&c.*) and conducted according to his particular degree of Knowledge, and Addreſs; which is the Effect of a particular Set of Objects, and a particular Organiſm of Body. In a word, in Art there is a moral View or Motive ſuperadded to the natural Science, or Perception; which Motive is the proper Principle, or *primum Mobile* of Art: Perception is its Matter; and ſome Member of the Body its Organ or Inſtrument. And from ſuch new Principle, *&c.* ariſe a new Set of ſecundary Perceptions, analogous to the natural and primary ones. The whole, therefore, ends in this, That Science ariſes from a natural Principle, Art from a moral one; or even, as moral Matters are alſo in one Senſe natural, Science may be ſaid to be of divine Original; Art, of human.

FROM this View may appear the deficiency of that eſtabliſhed Definition of Art; *Ars eſt habitus mentis cum recta ratione operativus*; A habit of the Mind operative according to right Reaſon: which is evidently taken from a partial Conſideration of the Subject. If it be the Character or Condition of Art to proceed according to right Reaſon; then, the more and purer this Reaſon, the more perfect the Art. But, in a great part of the Arts, Reaſon appears to have very little to do; and the leſs, as thoſe Arts are in greater Purity and Perfection.------Thus it is in Poetry; a Man that would undertake an Ode, or an Epic Poem on the ſtrength of his Reaſon, would be miſerably out: All his Efforts would never carry him above the humble Sphere of Verſification, where he muſt be contented to wait for an Impulſe of another kind. So far is Reaſon from leading the way, that it can ſcarce follow at a diſtance, ſo as to keep in ſight. The Principle of Motion is evidently ſomething other than Reaſon; otherwiſe, the greateſt Philoſophers would be the beſt Poets, and *vice verſâ*. On the contrary, moſt of us know of People very weak in Reaſon, who yet are powerful in Poetry: The Poetical Talent we have ſeen follow ſome People to *Bedlam*, others it has conveyed thither; and, which is ſtill more, ſome People have firſt found it there. Poetry is found an Appendage of one kind of Lunacy, and accordingly paſſes among Phyſicians for a Symptom thereof; nor is it to be queſtion'd, but, upon a Computation, *Moorfields* might number double the Poets with any other Spot of the like Dimenſions in the Kingdom.----Let not this paſs as any Reflection upon the Poets: A Spice of Madneſs is not ſo unreputable a thing as ſome imagine; and a Man that is ſeated on that Bench, finds himſelf in the beſt Company in the World. Some of the greateſt Philoſophers, Poets, Prophets, and Legiſlators; I might have ſaid Divines, Fathers, and Aſceticks too, of all Ages, are confeſſedly his Aſſeſſors. 'Tis remarkable with what Reſpect and Awe the Antients treated People ſuſpected to be touch'd: The very Names they call'd 'em by import the utmoſt Veneration, and place 'em, as it were, at the Threſhold of *Jupiter* *. One of their moſt common Appellations, *Numine afflati*, is at the ſame time the moſt juſt and philoſophical that can be thought of. In effect, a Share of Fury and Enthuſiaſm, is held by them a *ſine quâ non*, a Circumſtance abſolutely neceſſary to become any thing extraordinary; and hence ſo many Proverbial Expreſſions to that Purpoſe: " No great Genius *ſine aliqua mixtura* " *dementiæ*; No great Man *ſine aliquo afflatu Divino*, &c."----We may add, that the Poets themſelves have an hundred times expreſly attributed all their greater, and happier Thoughts, to Enthuſiaſm, Extaſy, and Fury; and they do it implicitly almoſt in every Piece they write: it being their ſtanding Practice, to take a formal leave of Reaſon, at firſt ſetting out, and call a Muſe for their future Guide: which, to talk out of the Poetical Style, is as much as to ſay, They reſign themſelves over to the Conduct of Genius and Imagination, which they now find ſtrong and prevalent in 'em. Thus inſpired, a new Scene of Objects ariſes; Caſtles on Caſtles: They ſee things inviſible to other Eyes, that is, the Phænomena of their own Fancy, which exiſt no where elſe. For tho what one Man's Reaſon perceives, all others, equally good and perfect, will perceive; even tho it have no Exiſtence but what that Perception gives it: yet it is not ſo with Imagination, which is a perſonal Thing, ariſing from the particular Diſpoſition or Organiſm, which is different in every two Perſons; whereas Reaſon ſprings from the general one, which is the ſame in the whole Species.----From ſuch prevalency of the Imagination, ariſes what we call Poetry, ΠΟΙΕΣΙΣ, q. d. *making*, *feigning*, *inventing*; which is common

* Θεομάντεις, ἐνθουσιασταὶ, ἐνθεαστικοὶ, θεόληπτοι, ἔνθεοι κάτοχοι, Ecſtatici, Phrenetici, Pythii, Siderii, &c.

to

to all Men in a greater or leſs degree: Philoſophers have a little of it, the Poets a great deal, but the Lunaticks ſcarce any thing elſe.

IT may look ſtrange to ſay that the Principle is preciſely of the ſame kind in 'em all. We are uſed to conſider it, in the two firſt, as Conſtitution; in the latter as Diſeaſe: In the one 'tis perpetual; in the other only occaſional: In the one, arbitrary and uncontroulable; in the other, limited and reſtrained. The Barque, in the one caſe, drives of neceſſity, as wanting Cable and Anchor to hold her; and in the other, ſails out of choice, as finding the Wind favourable and the Voyage deſirable. But all this amounts to little more than a difference in Degree, between the Fictions of the Poet and the Lunatic: The moving Principle is the ſame in both, tho its Effects be various. If the proper Balance and Adjuſtment between the Powers of Reaſon and Imagination be wanting, yet they ſtill retain their Nature; as the Wind is the ſame whether the Pilot direct the Helm or not.-----

SOME People give more ear to Authority than to Reaſon: to ſuch it may not be amiſs to obſerve, that this Doctrine is countenanc'd by the Antients; who, in ſome reſpects, ſeem to have had clearer and juſter Notions than the Moderns; as being leſs embaraſs'd with the Jargon, and Refinements of the ſcholaſtick Learning. Philoſophy, with them, was one degree more ſimple, and obvious than among us. Nature was not yet cover'd and conceal'd under ſo much Elucidation, but afforded more frequent and nearer Views of her-ſelf.----Accordingly, the Divine *Plato*, in his *Phædrus*, aſſerts, "That *Enthuſiaſm* and *Mania* are one and the "ſame thing;" and has a long, and cogent Diſcourſe, to prove that it muſt be ſo: And among the ſeveral Species of Enthuſiaſm, he expreſly ranks Poetry. In effect, Ποιητικὸν and Μαντικὸν, make two of the principal Branches in his Diviſion of Enthuſiaſm, or Inſpiration. And *Plutarch* *, tho he divide Enthuſiaſm ſomewhat differently from *Plato*; yet clearly agrees with him in making Poetry a Species of it. Nay, the moſt reſerved of all the antient Criticks, *Longinus*, declares, that "the Poet is poſſeſs'd with a kind of Enthuſiaſm; that he "believes he really ſees what he ſpeaks; and repreſents it ſo to others that they catch the Enthuſiaſm, and "ſee it likewiſe †." Add, that ſpeaking of the *Orators*, he does not ſcruple to uſe Πνεῦμα ἐνθουσιαστικὸν, as ſynonymous with Μανία.----But this Point will be conſider'd more fully hereafter.

THE Principle then of the Art of Poetry is ſomething other than Reaſon; and I know of no Art that has more of the Nature and Eſſence of an Art, than Poetry: Nothing that can faſhion, build, produce things, *&c.* at that rate: Sculpture, Architecture, Agriculture, *&c.* are Arts, but in a much inferiour Degree.----And yet, turning another ſide of Things forward, Poetry will ſcarce appear to have any thing of an Art in it, but rather to be all the Work of Nature; wherein human Thought and Study have the leaſt hand. It is produced by a Principle ſuperiour to that of Reaſon, *i. e.* a more immediate Action of the Author of Nature.---But the ſame may be ſaid of moſt of the other Arts; and when we ſay that Art produces Effects, we mean Nature does ſo. The Poet's Imagination may be conſidered as a Field, wherein the Author of all Things ſhews his Handy-work, by the Production of a Set of Objects which exiſted not before: New Images ariſe here, like new Plants, according to the ſettled Laws of the Creator; ſo fruitful is the Womb of Nature! New Worlds innumerable ariſe out of a ſingle old one.

THE Factive Arts, as ſome love to call 'em, *i. e.* thoſe from which permanent Effects ariſe, may be conſider'd as ſo many ſecondary or derivative Natures, rais'd by Engraftment from the old Stock, and ſpreading or projecting out from this, or that part thereof.-----Here, at firſt ſight, Man appears ſomewhat in quality of Creator; the Potter's power over his Clay has been made a Shadow or Similitude of that of the Deity over his Works: and yet the Potter, at beſt, is only acceſſary or occaſional to his own Productions. Nature, that is, the Power or Principle of Action and Motion to which we owe this viſible Frame and all the Appearances and Alterations therein, acts by fixed Laws, which neceſſarily produce different Effects, according to the different Circumſtances of Things: Thus a glaſs Globe being ſwiftly revolved about its Axis, and a Hand applied to its Surface; feels hot, emits Light, attracts Bodies, *&c. i. e.* is a hot, luminous, electrical Body, tho without theſe Conditions it has none of thoſe Properties. So Gunpowder, otherwiſe a Maſs of dark, inert, motionleſs Matter; being only touched with a lighted Brand, inſtantly blazes up, and ſmokes, with Noiſe; perhaps burſts a Rock, or drives a Ball, in a parabolic Direction, and levels a Tower, or other Work. Now, nothing ariſes here but in conſequence of pre-eſtabliſh'd Laws, which import that the Globe and the Powder, whenever by any means they come under theſe or t'other Circumſtances, ſhall have theſe or t'other Effects. There are no two Bodies in Nature more different than the ſame is from it-ſelf, under the different Circumſtances of Contiguity or Non-contiguity with this or the other Body, *e. g.* a Spark of Fire. But both States are equally natural; and in effect there muſt be a Law of Nature for the one, as well as the other.----Now the Agency of Man amounts to this, that he has it in his power to put Bodies in ſuch Circumſtances as are neceſſary to bring 'em under this or that Law, or to make this or that reſpective Law take effect. And this we call *Art*; and by this means we can produce a number of things, or bring 'em into act, which otherwiſe would have remained in eternal Non-entity, or barely *in Potentia*. Man may be ſaid to create 'em, but no otherwiſe than the Apothecary creates the Bliſter, or the Gardner the Apple; *i. e.* thoſe Effects would neceſſarily have ariſen, upon the ſame Poſition of the Cantharides and the Cutis, or the Scion and Stock, if there never had been Apothecary or Gardner in the World.

WE may define the Works or Productions of Art, therefore, to be all thoſe Phænomena or Effects which would not have aroſe without the Agency or Intervention of Man. Now Man can only be ſaid to act or intervene, ſo far as what he does is of his own Source or Principle, without being moved or directed by any eſtabliſhed Law of Nature, *i. e.* ſo far as he is exempted from the Influences of any neceſſary Laws of Nature concurring, however remotely, to ſuch Effect. So that if, as ſome Philoſophers have maintained, Man were not really and truly a free Agent; there would be no ſuch thing as Art, in the Senſe here underſtood: but *Art* would only be a name given to that Syſtem or Series of Effects, to which Man is made by Nature, and in her hands, ſubſervient; and might with equal reaſon be attributed to ſuch Effects as any other natural Production, *e. g.* a Plant, or Mineral, is ſubſervient.

HAD it not been for the inſpired Writers, we ſhould not have known but that the whole Syſtem of our World is a Production of Art; the Reſult of a new Application of Things made by ſome created Being, in virtue or conſequence of ſome pre-eſtabliſh'd Laws of the Almighty. Our general Laws of Nature, and Motion, might only be particular Caſes of ſome more univerſal one; ſpecial Inſtances, emerging out of ſome more general one, which it-ſelf was not perhaps the firſt. Thus there might be an infinite Series or Subordination of Syſtems of Nature, each more univerſal, extenſive, and, as we call it, more metaphyſical, *i. e.* nearer the Source of Power and Action, than other.

SOMETHING like this, we actually ſee in our own little Syſtem: The Mineral World is ſubſervient to the Vegetable; and this to the Animal. Mineral Matters, under certain Conditions which bring them under the Laws of Vegetation, paſs into Plants; and from particular Applications of Parcels of Plants, Animal

* In Ἔρωτ.

† Περὶ Ὕψους.

Subſtances ariſe. Under other Circumſtances, the ſame Matters become ſubject to other Laws, (*i. e.* other Actions of the Creator, for Laws are no other) and return the way they came; Animals into Plants, and theſe into Minerals.----Nothing can be more ſimple and uniform than the whole Diſpenſation: A Body is only what it is, in virtue of a Law of Nature, *i. e.* of the Will of the Creator; and conſequently 'tis this alone can alter it. Hence, a piece of Matter, under the different Circumſtances of Motion or Reſt, Contiguity with this or with that Body, falling in with new Laws; by the Concurrence and Activity thereof, becomes a Means of exhibiting different Phænomena: on occaſion whereof we give it a different Denomination, and range it under a different Claſs of natural Things: And to the Means whereby thoſe Circumſtances are determin'd, we give the Names of *Generation*, *Corruption*, *Putrefaction*, *Fermentation*, *Vegetation*, *Animation*, *Aſſimilation*, *Accretion*, &c. which are all accountable for on the ſame Principle. 'Tis no more wonderful, a *Fungus*, with all its Furniture of Flowers, Seed, *&c.* ſhould ariſe from a Mixture of Earth and Dung; than to behold ſo wonderful a Body as *Flame*, ariſe from a caſual Colliſion of Flint and Steel; or *Air* from the mere Diſſolution of a *Metal*.

WE ſee, then, how far Man is concern'd in the Productions of Art. Our Endeavours are contriv'd by Nature to be Means acceſſory to the Law's taking place, from whence the Effects are to ariſe. We are part of the Chain whereby the Effect is connected to the Cauſe. The Circumſtances are in our Power on which ſuch, and ſuch Laws depend; and thus far we may be ſaid to be *Active*, in the Caſe of Art: ſuppoſing that there is nothing higher, or further; and that the Chain ends with us; in a word, that our Agency is not ſubordinate, but collateral to that of the Almighty. But if there be other ſuperior Laws which reſpect thoſe ſame Circumſtances, and which are not in our Power, *i. e.* if the Circumſtances neceſſary to the former Law, be themſelves ſuppoſed neceſſary Laws, and the immediate Work of Nature; our Agency will dwindle into nothing. The utmoſt that can be ſaid of us in ſuch caſe, is, That we are Active in reſpect of the one, and Paſſive in that of the other; which to moſt People may appear a kind of Contradiction.-----The Statue can't be form'd, unleſs our Deſire or Inclination concur thereto; ſo far its Exiſtence depends on us: But are our Deſires and Inclinations with reſpect thereto of our own growth; or do they ariſe naturally, in conſequence of an Apprehenſion of Good, and Advantage in the Subject? That is, does any thing appear good and advantageous to us abſolutely and of it ſelf; or only what the Creator repreſents to us as ſo? And do we deſire or purſue this ſeeming Good, from any Principle or Tendency that is in us, other than what we owe to his Laws? The Difficulty ſeems to amount to this; whether between our Faculties of apprehending and willing, and their reſpective Objects, there be any Relation which he did not create or eſtabliſh?-----If any alledge, that 'tis ſuch Relation conſtitutes the Faculty; and therefore that the Queſtion ends in this, Whether our Faculties are from God or our ſelves: *i. e.* whether they can be the Cauſes of themſelves? I ſhould ſuſpect ſome Sophiſm in the Caſe, which at preſent I have not leiſure to detect.

BUT having traced the Agency of Man thus far, we muſt be obliged here to deſiſt; and from the *Factive Arts* reſume the Conſideration of the *Active* ones; *i. e.* paſs from what Art does out of us, to what it is in us: or rather, from the Arts whoſe Source is ſuppoſed in our ſelves, and which proceed outwards; to thoſe whoſe Source ſeems without us, and tend inwards: That is, from thoſe which ariſe from our Obſervation and Reaſon, directing us how to miniſter Occaſions to the Laws which obtain in the external World; to thoſe which flow into our Imagination, and furniſh Occaſions to the Laws which obtain in the internal World.----An Inquiry which may perhaps carry us where the Reader little imagines; but which will afford an ample Diſcuſſion of the Principle above eſtabliſh'd; and a further Inſight into the Origin and Cauſe of Science and Art; and the Nature and Meaſure of our Agency and Paſſion therein.

WE have already ſpoke ſomething concerning *Poetry*; not for its own ſake, but as a proper Inſtance to illuſtrate the Nature of *Art* in. It makes the loweſt Article in our *Analyſis*; which, in reality, is the higheſt in the Scale of Art; there being a ſort of progreſſive Riſing from the Beginning of the Analyſis to the End. It begins with the firſt Matter of Knowledge, the common Objects of our Senſes; and proceeds thro' the various Modifications they undergo by the other Faculties of Imagination and Reaſon, till thoſe ſenſible Objects become ſo much our own, are ſo aſſimilated to us, and as it were humaniz'd; that they are part of our ſelves, and obey and take Directions from our Will, and miniſter to all our Views and Purpoſes: of which, this of producing Images and making Fables, is in one Senſe the higheſt; inaſmuch as the greateſt Effects here ariſe from the ſlendereſt Means and Endeavours. The Poet ſtirs but little in the Matter; but Nature co-operates ſo ſtrongly with him, that this little ſuffices, even to make new Worlds. In effect, the Poet ſeems, as it were, to ſit nearer the Spring of Action than other Men; and to have only to do with the general and higher Principles thereof, which command and direct a Number of other ſubordinate ones, that he himſelf is not aware of.-----What we ſhall ſay of Poetry, therefore, will hold proportionally of all the other Arts; and we have only kept to that, becauſe the Influence or Inſpiration is here confeſſedly the pureſt, and the neareſt to Heaven of all others *. The Principle or Spirit of Poetry, may be ſaid to be that of Art in general; and hence many † Authors make no ſcruple to make all Arts the Invention of Poets: Thus it is *Homer* is often complimented with being the Father of all Arts.----This has, indeed, an Appearance of Truth; but 'tis only an Appearance: For *Homer*, ſuppoſing him the Inventor of Poetry, or at leaſt the beſt Poet; has no other Title to the Invention of other Arts, than what he derives either from a greater Share of the Spirit whereby they are produc'd, than other People; or from his having communicated that Spirit, by the Force of his Poems, thro' other People, where it has generated, and brought forth other Arts; or from the Seeds and Principles of Arts and Inventions, which his Imagination was ſo pregnant withal, and which he diſſeminated over the World, where many of 'em, by due Cultivation, have ſprung up into the Form and Maturity we now ſee 'em.

THE Mind is allowed to be paſſive in reſpect of the Matter of the Art of *Poetry*. We need not quote the Poets to prove it: No true Poet ever queſtion'd his Inſpiration: Every body knows that their whole Syſtem is built on the Suppoſition. And hence the Stories of *Apollo* and the *Muſes*, of *Helicon* and *Parnaſſus*; the Dreams of *Pindus*, and the *Aonian* Maids: with a thouſand other Reveries ‡. But the Philoſophers, and Criticks alſo, give 'em their Suffrages, and atteſt their Inſpiration, in the ſtrongeſt Terms. *Plato* has already been cited to this Purpoſe: He contends, at large, that all Poetry is "by immediate divine Inſpiration, in the proper, and literal Senſe of the Word ‖." *Ariſtotle* confirms it: "Ἔνθεον ἡ ποίησις, Poetry comes by divine Inſpiration **." And *Plutarch* ſays as much of all the Branches of Enthuſiaſm; Poetical, Divinatory, Bacchical or Corybantical, Martial, and Erotick: to all which, he aſſerts, the Appellation, Ἐνθουσιαστικὸν, or Ἐνθεαστικὸν πάθος †*, equally agrees.----And not only ſo, but they hold the Enthuſiaſm communicable from one to another. It ariſes from the Poet, as its Centre, and is diffus'd, *in Orbem*; in a leſs degree of intenſeneſs, the further it recedes from him. *Plato* aſſerts, that the Ῥαψῳδοὶ, or thoſe who ſung and rehears'd the Poets Works on the publick Theatres; nay, and the Spectators themſelves,

* Caſaub. *of Enthuſ.* Dacier's *Homer, in Pref.* Max. Tyrius. Porphyry, Περὶ τῆς Ὁμήρου φιλοσοφίας.

† Vid. Rapin. Reflex.

‡ *Vid.* Perſ. in Prol. ad Satyr. i.

†* In Ἔρωτ.

** Περὶ Ποιητικῆς.

‖ In Dial. Ion. or περὶ τῆς Ἰλιάδ.

were

were all divinely inſpir'd, in ſome degree: which he illuſtrates in the Caſe of a Needle touch'd by a Magnet, which communicates an attractive Property to another Needle; that, to a third; and ſo on, with a continual Diminution.----Nor does the Effect end here, but the Profeſſors of other Arts, as *Sculpture*, *Criticiſm*, and even *Philoſophy* it ſelf, borrow their Flame and Inſpiration from this Fire. Thus *Phidias* declared he was inſpired to make that wonderful Statue of *Jupiter Olympus*, by the reading of *Homer*: And thus *Ariſtotle* may be ſaid to have been inſpired by the ſame Poet, to compoſe his immortal *Poeticks*: The like is ſaid of *Longinus*; that he was inſpired by the Muſes, or with the Fire of a Poet *.

BUT after Poetry, *Rhetorick* comes neareſt, and ſhares moſt of the Spirit thereof, even more than Criticiſm. Accordingly, *Plato*, in his Dialogue inſcribed *Menon*, allows that "as we ſay Pythians, Prophets, and "Poets are divinely agitated; ſo we do Orators." Elſewhere he adds, "That they are certainly inſpir'd "of God, and plainly poſſeſs'd." So *Dion. Halicarnaſſeus* † relates, that "*Demoſthenes* did plainly ἐνθουσιᾶν." And adds, that the Diſtemper caught ſo among his Audience, that "they were poſſeſs'd at ſecond hand, "and brought to do many things againſt their own Reaſon, and Judgment:" And *Æſchines*, his profeſſed Enemy and Antagoniſt allows as much. I need not ſay that *Plutarch* relates the like of *Cicero*, in the Inſtance of his Oration to *Cæſar*, for *Ligarius*.

SOMETHING like this has been obſerved, even in the Caſe of *Prayer* to God: Several Hereticks are on record for poſſeſſing their Hearers that way. *Hacket*, executed for Blaſphemy under Queen *Elizabeth*, is ſaid, by the Hiſtorian, "to have raviſh'd all that heard him at his Devotions; and converted many in ſpite of their "Teeth:" And *Sarravia* relates, the People were perſuaded that "God directed his Tongue." St. *Baſil* even affirms ‡, "that our Prayers are never right or acceptable, till the Ardor thereof carry us out of our ſelves, ſo "that God poſſeſs us in ſome extraordinary manner." And hence the learned and pious *Caſaubon* eſtabliſhes a new kind of Enthuſiaſm, which he calls *Supplicative*, or *Precatory*; as he does divers others, as Muſical Enthuſiaſm, Mechanical Enthuſiaſm, *&c.* To ſay no more, the Author laſt mentioned makes no ſcruple to make even "the ordinary Delights and Benefits Men receive from the Harangues of Orators, Sophiſts, Preachers, *&c.* "the Effect of Enthuſiaſm and Inſpiration; as being what could never ariſe from mere Reaſon." And *Plutarch*, and others, make that *Ardor* which the Soldier feels in Battle, of the ſame kind with that which inſpir'd the Prophet, Orator, and Poet **.

WE have here little leſs than a Syſtem, ſufficient to account for moſt of the Phænomena in the Animal World, on Principles of *Enthuſiaſm*. Reaſon, it may be obſerv'd, has here little to do; and it ſhould ſeem, that Man ought rather to be defined, *Animal Enthuſiaſticum*, than *Animal Rationale*. And yet this is only a few, out of infinite Inſtances, of the immediate Agency and Inſpiration of the Deity. We find the ſame Principle in every Art, every Invention, every Diſcovery, where no natural and neceſſary Connection is perceiv'd between the Diſcovery, and ſomething known before, *i. e.* where the Reaſon of ſuch Diſcovery, is not apprehended by any intuitive Knowledge. What has no immediate Dependance either on what we perceive by Senſation or Reaſon, comes by the Vehicle of Inſpiration, *i. e.* of Imagination or Invention, for there it ends. The Imagination may be called the Medium of Art, as Senſe is of Science. The Faculty of Reaſon, can make no great Diſcoveries; it can only advance from one Step to another, which muſt be ready laid to its Hand; and if theſe be any where interrupted or diſcontinued, there it is at a Stand. 'Tis, in fine, a limited Principle, ſubject to very narrow Bounds; whereas the Imagination ſeems to be indefinite, and ſtill kept in the Creator's Hand, to be occaſionally made uſe of for the Conduct of Mankind.

THE Truth is, when we ſay, ſuch a Thing is the Effect of Enthuſiaſm, or Inſpiration; ſpeaking, I mean, of profane Matters; (the Inſpiration, for inſtance, of *Scripture*, being Matter of a very different Conſideration, and quite beſide our preſent Purpoſe) this does not remove it out of the ordinary Courſe of Things: It does not put it on any other Principle, different from that whereby Cauſes and Effects ſucceed each other in the phyſical World. We can account for the Phænomena of the Imagination, as well as thoſe of Senſation. They have their reſpective Laws, like other things; which they are ſubject to; and to which we have Arts, and Proceſſes appropriated. In effect, all the Inſpiration here ſpoke of, may be produced without any great Conjuration.----If the Reader will not take Offence at this novel Philoſophy, he may be convinc'd of it. And 1°, in the Inſtance of the *Muſical* Kind.

ENTHUSIASM is defined, in an antient Author ††, to be "when a Perſon engaged in ſome Office of "Religion; and hearing the Sound of Drums, Trumpets, Cymbals, *&c.* becomes alienated, or tranſported out "of himſelf, and ſees Things unſeen to others." And what is here called *Enthuſiaſm*, is more ſignificantly call'd by another *‡, καλκότυπος μανία, Madneſs occaſioned by the Sound of brazen Inſtruments: which coincides with the *Furor Corybanticus*, ſo much ſpoke of among the Antients.

NOW, as we do not know any immediate Correſpondence or Connexion between any one Sound, and any Idea; 'tis no more ſtrange that one Idea ſhould be excited by it, than another. There is a Law of the Creator, whereby a certain Order and Succeſſion of Vibrations of the Air, is arbitrarily made the Occaſion of a certain Perception in our Minds; and as the Circumſtances of this Vibration are alter'd, a different Idea ariſes: *i. e.* to every different Combination of ſuch Circumſtances, a different Idea is attach'd; to uſual and ordinary Combinations, ordinary Ideas; and to unuſual and extraordinary, extraordinary Ideas. And hence there is, perhaps, no Idea, no Image whatever, but may be raiſed by means of Sound. Now, I do not know what *Common Senſe* is, unleſs it be, the having common Ideas. Juſt ſo far as new Perceptions are rais'd in us, in Excluſion of the old ones; we may be ſaid to be removed out of our ſelves, *i. e.* we are ſo far got into another Syſtem; the Phænomena which now preſent themſelves to us, being ſo far different, from what they were before, and even from what they would ſtill be, to another Perſon in the ſame Place, but under other Circumſtances. On this Principle, we ſhall ſcarce find any thing but might be produced by Muſick; eſpecially, when to the Force of well-adjuſted Inſtruments, which the Antients ſeem to have ſtudy'd more, and underſtood better, than we; was added to the Solemnity of a Temple, the ſuppoſed Reſidence of a God, whoſe Statue there ſtood before 'em; with the awful Rites of Invocation; accompanied with furious Geſticulations, Dancings, and all the Devices that could be thought of, to unhinge the natural Senſe, and Reaſon, which we find is but frail and precarious at beſt, and apt to play us falſe when moſt duly looked to. Few People are able to ſtand up againſt mere Muſick; which, unaſſiſted with any thing elſe, has been made to produce, and remove ſettled Madneſs; cure Fevers ‡‡; drive Perſons to kill themſelves, or their Friends. 'Tis not long ſince the *Italian* died, who had reduced the turning of People mad by his Muſick, into a regular Art; which he could depend on at any time ‖.-----The Reader that has a mind to ſee further on this Head, may conſult the Articles, SOUND, MUSICK, TARANTULA, *&c.* in the Body of the Book.

* Pope's *Eſſay on Criticiſm.*
** Ubi ſupra.
‡‡ Hiſt. de l' Acad. R. des Scien. An. 1708, & 1718.
† Περὶ τῆς Δημοσ.
†† Ὅροι, *or Collect. of Med. Defin. aſcribed to* Galen.
‡ Apud. Caſaub. ubi ſupra, p. 274.
*† Epigr. in Anthol. Græc.
‖ Niewentiit, Rel. Philoſoph. Tom. I. Contemp. 14.

2°, THE Inſpiration of *Poetry* is of a ſtiller, and purer Kind; and needs leſs Artifice and Apparatus to produce it in an Imagination naturally diſpoſed for it. The attentive Conſideration of ſome intereſting Object, uſually ſuffices to ſet it a going. And the Gentlemen of that Faculty have all Nature to chuſe out of: The fineſt Seaſons, the moſt agreeable Scenes, and the moſt moving Objects. Hence it is, that they are continually harping on "Groves, and Shades, and Gods, and Nymphs, and Darts, and Flames."-----How do they riot in "Meadows trim with Daiſies pied; ſhallow Brooks, and Rivers wide: Towers and Battlements they "ſee, boſomed high in tufted Trees." Sometimes, they raiſe up "Knights, and Squires, and Maids "forlorn; or, Lover pendant on a Willow Tree, or Lady wandring by a River's Side." Then, "Tilts "and Tournaments, and Feats of Arms: Pomp, and Feaſt, and Revelry, with Maſque and antique Pageantry: "Stories of *Thebes* or *Pelops* Line; or the Tale of *Troy* divine: Of *Arthur* and *Cambuſcan* bold; of *Cambal* "and of *Algarſife*, and who took *Canace* to Wife."-----If theſe fail, they have all that is gloomy, and ſolemn, and terrible in Nature at their Beck; we may now expect to ſee "the red Bolt, or forked Lightning glare." Earthquakes and Tempeſts ſeldom roar in vain: if by chance they do, the "ill-boding Raven's Croke" is ready at hand; or elſe "the far-off Curfew ſounds, o'er ſome wide watery Shore, ſwinging ſlow with ſolemn roar." And now for "baleful Ebon Shades, and ragged low brow'd Rocks:" Next enter "horrid Shapes, and "Shrieks, and Sights unholy: Gorgons, and Hydra's, and Chimera's dire." Images of things moſt moving to Senſe, readily alarm and raiſe a Commotion in the Imagination. And the new Ideas thus procured, coming to be mixed, and combined in the Imagination, with others there before; new Effects ariſe from 'em, in conſequence of the Laws of the Creator: much as intelligibly as Fire and Flame, upon mixing two chymical Liquors.

SCALIGER, in his *Poetics*, makes two Kinds of Θεοπνεύστων, or Poets divinely inſpired. The firſt, thoſe on whom the Inſpiration falls, as it were, from Heaven; without any thought or ſeeking, or at leaſt by means of Prayer and Invocation. The ſecond, thoſe in whom it is procured by the Fumes of Wine.

ALL that is required to the firſt, is only a delicate, pregnant Imagination; ſuſceptible of any feeble Impreſſions that may happen to be made in the Courſe of Things; and ready to take fire at the leaſt Spark. The Surfaces of the finer Fluids, we find, are kept in continual motion by the bare Tremor of the Atmoſphere, tho to us inſenſible: And thus the Air is never ſo ſtill, but that the Aſpin Leaf feels its Impulſe, and bends and trembles to it; when others require a ruder Guſt to move 'em: Yet theſe, too, give way in a general Storm; whole Foreſts then totter indifferently: even the Trunks of ſturdieſt Oaks, now yield like the reſt. -----And, accordingly, we read, in antient Hiſtory, of whole Nations being at once ſeiz'd with the poetical Fury. Few of the Cities of *Greece*, not even *Athens* it ſelf, with all its Philoſophy, but has one time or other labour'd under theſe epidemical Enthuſiaſms.

WE have already obſerv'd, that Invention is the Principle, or Source of Poetry. An excellent modern Poet adds *, that 'tis this which furniſhes Art with all its materials; and that without it, Judgment it ſelf can, at beſt, but ſteal wiſely.-----Now, this Faculty of Invention it ſelf, is uſually no other than a Delicacy, or Readineſs of taking Hints: but even at moſt, what we are ſaid to *invent*, is only what reſults, or ariſes from ſomething already in us. There is no new Matter got by inventing: that can only come by the way of Senſe and Obſervation: All that paſſes in the other Caſe, is, that from the Memory of certain Things, *i. e.* the Compreſence of certain Ideas to the Mind; certain new Ideas ariſe, according to the Order of Things. The ſprightly Imagination is led, on various Occaſions, to compound its Ideas, and many of 'em ſo oddly and boldly, that we take its Productions for new Things; and thus think we invent 'em, becauſe they did not exiſt in us before in that form; tho the Matter or Elements thereof did. There is no more real Invention in the Poet, than in the Tapeſtry or Moſaic Worker, who ranges and combines the various colour'd Materials furniſh'd to his Hand, ſo as to make an Aſſemblage or Picture, which before had no Exiſtence.

THE Reader who has any doubt about this, need only take the firſt piece of Poetry that comes in his way, to be convinced, that all that is new and moving in it, is no other than new Compoſition or Combination of ſenſible Ideas. In the *Il Allegro* and *Il Penſeroſo*, for inſtance, two of the moſt poetical Pieces in our, or perhaps any other Language; how eaſy is it to reſolve all that is ſo magical and raviſhing, to the new, uncouth, and frequently wild and romantick Aſſemblages of Imagery. Indeed, who can contain himſelf at "——Sport which wrinkled Care derides, and Laughter holding both his Sides.——*Cynthia* peeping thro' a "Cloud, while rocking Winds are piping loud.——To hear the Lark begin her Flight, and ſinging ſtartle the "dull Night: Or the Cock with lively Din, ſcatter the Rear of Darkneſs thin: Or liſten how the Hound and "Horn, loudly rouſe the ſlumbering Morn.——Or, ſee glowing Embers thro' the Room, teach Light to "counterfeit a Gloom.——Or ſtoried Windows richly dight, caſting a dim religious Light.——Or hear *Orpheus* "ſing ſuch Notes as warbled to the String, drew Iron Tears down *Pluto*'s Cheek.——Or Verſe with many a "winding Bout, of linked Sweetneſs long drawn out, with wanton Heed and giddy Cunning, the melting Voice "thro' Mazes running; untwiſting all the Chains that tie the hidden Soul of Harmony."

PERSONIFICATION, which is of that Extent and Importance that it is uſually held the Life and Eſſence of Poetry; is a vaſt Source of new Imagery. By this, not only different Objects, but different Syſtems and Worlds, are combined and blended together; and what belongs to one Kind of Beings, Man, is attributed to every other: each Object, either of Senſe or Imagination, being occaſionally inveſted with all the Characters and Properties belonging to the human Kind. Thus, an Arrow grows *impatient*, and *thirſts* to *drink* the Blood of a Foe; or *loiters* and ſtops half way, *loth* to *carry* Death, *&c.* So an Action of the Body, *Laughter*, is above repreſented as it ſelf laughing, ready to burſt its Sides. And in the ſame Piece we have one of the Planets, the Moon, repreſented as *trick'd up* and *frounced*; and again, as *kerchief'd*, and in a decent Undreſs, and thus going a *Hunting*. To tell us, that a fine Spring Morning, attended with a gentle Gale of Wind, is very pleaſant; preſently,—"Zephyr "with Aurora playing, as he met her once a Maying, on a Bed of Violets blue, and freſh blown Roſes dipt "in Dew, fill'd her with a Daughter fair, yclep'd in Heaven *Euphroſyne*, and Mirth on Earth." How conſiſtent with the Nature of Things, that a Breath of Air ſhould lay an early Hour of the Day down; and that from a green Gown thus given, a Paſſion of the Mind ſhould in time be brought forth? In effect, the Inſpiration of the Poet amounts to little more than relating things that are naturally incongruous. He preſents new Objects, new Worlds, but 'tis only by differently combining the Parts of the old one. He does not make any thing, he only patches: He does not invent, he only tranſpoſes: Nor has he the leaſt Power to move, other than what he derives from the Novelty and Strangeneſs of his Combinations; to which nothing exiſts in the ordinary Syſtem, any thing conformable.——To ſay no more, if Invention furniſh Art; Memory furniſhes the Invention; and Senſation the Memory, where all Knowledge originally commences. And the whole Proceſs is nothing but the Action, or Operation of the Deity in a Courſe of Laws.

AS to the ſecond Kind of Poets, in whom the Inſpiration is promoted or excited by means of Wine; *Caſaubon* is perfectly frighted at it; judging it the higheſt Strain of Impiety, to ſuppoſe a Man may be divinely

* Pope *in Pref. to* Homer.

inſpir'd by the Fumes of Liquor.—And yet I don't know whether his Fright be not founded on a Miſapprehenſion. If *Scaliger* or any other Perſon alledge, that the Juice of the Grape may be an Occaſion of ſuch an Effect, *i. e.* a Means or Condition neceſſary to make the Laws that concur to Invention take place; I do not ſee what Religion has to do here, more than in any other Enthuſiaſm. The uſe of ſuch a Means, is no ways derogatory to the Power or Goodneſs of God; who ſtill remains the Author of this, as of any other Inſpiration; whether it be by Viſions, by Voices, Dreams, or the like. What matters it whether the Sound of a Cymbal, or the Sight of an Image, or the Effluvia of a Liquor be the Occaſion? So long as he is the Cauſe, what matters it what Inſtrument he makes uſe of? And of all the Bleſſings this Juice is made the Occaſion of to us; why ſhould it be precluded from that, which none of God's Creatures, not even the vileſt, but occaſionally miniſters? The Antients did not think ſo meanly of it: they ſet up a God on purpoſe to preſide over it; and it even had the largeſt Share in their moſt ſolemn Ceremonies of Religion.

THE Inſpiration of *Orators*, bears a near Relation to that of the Poets; tho being ſomewhat groſſer, it becomes more technical, and demands more Induſtry, and Art.——*Quintilian* tells us how a Rhetor is to get inſpir'd *; "not by ſupinely lolling and gazing at the next moveable, and careleſly turning things over in his Mind; but by "imagining the Judge and the Audience preſent, and ſtrongly repreſenting to himſelf the Time, the Occaſion," &c. He adds, that no body ought to pretend to be an Orator, unleſs he have this Art of Inſpiration at command; ſo that he can raiſe it at pleaſure.

WHAT has been ſaid above, contains ſome of the general Principles of Enthuſiaſm, and their Connection with other phyſical Effects: and 'twill be eaſy to trace and purſue the ſame, where they appear in other Caſes, and with other Circumſtances. Thus the Inſpiration excited by the Orator in his Audience, is reſolved, by *Caſaubon*, into the Muſick of the Speaker, *i. e.* the Tone and Cadence of his Voice; and the Συνθεσις, or order and placing of his Words: In which laſt, how ſimple and trivial ſoever it may ſeem, all the great Maſters on the Subject allow ſomewhat myſterious and unaccountably forcible; and accordingly make it the principal Part of Rhetorick. And yet there is nothing in the Whole, but what reſults from the Powers, Properties, &c. of the ſeveral Letters, conſider'd as ſo many Sounds, artfully combin'd. In effect, there is ſome Ρυθμὸς, or Dimenſion, and ſome Μετρον, or Numbers in all Diction; much more in that of Oratory: And Muſick it ſelf has no Charm in it, but what it derives from thoſe very Sources.

NOR muſt it be omitted, that the uſe of *Metaphors* contributes its ſhare to the Effect. The Secret whereof conſiſts in this, that they are, as it were, accommodated to the Senſes; and preſent ſuch Images to the Imagination, as move us moſt when perceived in the Way of Senſation †.

AS to that Enthuſiaſm felt in *Prayer*, its Cauſe is not far to ſeek. The Powers of Rhetorick, and Muſick; and of a peculiar Fervour of Imagination, rais'd by an Apprehenſion of the Preſence of God, &c. will go a great way. We may add, that the antient Heathens made uſe of Dithyrambics in all their moſt ſolemn Prayers; which *Proclus* obſerves, are peculiarly fit to ſtir up enthuſiaſtical Diſpoſitions. A Man that rides *Pindar*'s Horſe, cannot well fail of going at a great rate.

BUT the moſt extraordinary and unaccountable kind of Inſpiration is ſtill behind, *viz.* that of *Prophecy*, *Divination*, *diſcovering of Cures by Dreams*, &c. which yet may all be produced by Art; and accordingly, have all been taught and ſtudied like other Arts: not to ſay, alſo, practiſed like them, for a Livelihood. Schools and Colleges of Prophets, Divines, Augurs, &c. were numerous both among Jews and Gentiles; and there was little in their Diſcipline, but what may be reſolved into what has been already ſaid. Here, all the Means above mentioned, all the Springs of Enthuſiaſm, were uſed; and frequently combin'd together, to make the more compound and extraordinary Effect. The Sight of vaſt Objects, as Rocks and Mountains, wild Proſpects, ſolitary Groves, gloomy Caves, furious Rivers, Seas, &c. which we find to work ſo ſtrongly on the Mind, were indulged; and ‡ frequent Changes, and ſudden Tranſitions made from one to another **. Such unuſual Objects neceſſarily ſuggeſted unuſual Ideas; which were heighten'd by proper Applications to all the other Senſes. And when the Man was at length got out of the ordinary Syſtem of Thinking, into another more unuſual and extraordinary, tho equally phyſical, or if you will, mechanical one; what he utter'd was judged all oracular: It was not his Senſe, or Reaſon that ſpoke; and therefore it muſt be that of God himſelf. And among a large Train of Objects which preſented themſelves to him, ſome of 'em could not want an Analogy to Things that were really to come; at leaſt, in the Opinion of a Perſon already poſſeſſed with the Notion thereof. It may be added, that the Propheſies themſelves, had their Share in producing Futurity; the Events whereof partook of the Predictions, ſome more, others leſs, according to the degree of Poſſeſſion of the Parties concerned in them. In effect, the Revelations ſtill retain'd ſomething of the Means made uſe of to raiſe 'em. Thus, if the one were either agreeable or diſpleaſing, the other would be of the ſame Kind: And hence a Revelation was artificially produceable of the Complexion required: which was the very Apex of the Art. So that the Divination, when moſt perfect, really ſuppoſed a natural Knowledge of the Thing demanded, and was built on it.

AS to *Dreams*, &c. there was a Formula for 'em; the Circumſtances whereof might be appropriated to raiſe in the Imagination an Idea of the Thing required.——After a number of Ceremonies, the Party was to ſleep in the Temple: *Pellibus incubuit ſtratis, ſomnumque petivit.* And the Prieſts had not only the placing of his Body, and the ſtrewing of his Bed; but alſo the Management of Odours, Sounds, &c. in the Night-time. So that if any natural Means were known for the Cure, here was room enough to ſuggeſt it to the Patient's Imagination, which was made acceſſible to 'em, and as it were put into their Hands. But, if no proper Remedy were known; as, 'tis probable, they hardly enter'd ſo far into the Part: yet, what was thus ſuggeſted, perhaps at random, how ſtrongly muſt it operate, when inforced by the Opinion of its coming by Miracle and Inſpiration? We ſee what the bare Preſence and Aſſurance of a Phyſician will frequently do; even cure Diſorders far out of the Reach of his Skill: and what an Improvement would it not be to the Faculty, to have the further Aſſiſtance of a little Shew of Religion and Ceremony?-----A deal more might be ſaid on this Head, from the Practice of EXORCISMS, AMULETS, PHYLACTERIES, &c. to which the Reader may turn in the Book; as alſo to the Articles WITCHCRAFT, EPHIALTES, &c.

IT appears then, that 'tis in vain that we pretend to pervert the Order of Nature. Senſation does and muſt inevitably precede Imagination; which cannot by any human Means come at the ſmalleſt Grain of any thing, but what paſſes thro' that Canal. There is no harm in ſaying, that ſuch Things are of Divine Inſpiration; the Miſchief lies in ſuppoſing, that theſe are more ſo than others; that what appears only to the Imagination, is more of God than what appears to Senſation: which is, in effect, to ſay, that we have ſome Knowledge which we do not receive from God.

* Inſtit. Lib. v.

† Cicero 3. de Orat.

‡ Multos Nemora Sylvæque, multos Amnes aut Maria commovent, quorum furibunda mens, &c. *Cic. de Divin.*

** Livy, *relating the horrible Rites of the* Saturnalia, *ſays*, "*Men* "*would hereupon be taken as if mad, fall into ſtrange fanatical Agi-* "*tations of Body, and break out into Propheſies:*" Velut mente capti, cum agitatione fanatica corporis vaticinari. Dec. iv. l. 9.

NO body can imagine, that what we have ſaid tends to exclude God, and Providence out of the World; but rather to eſtabliſh, and confirm 'em in it. So far is it from ſhewing, that the Deity has no hand in the Production of ſuch and ſuch Effects; that it ſhews, nothing elſe has any. The Whole is His; and the Agency of Man is only circumſtantial. For, what neceſſary Connexion between any of the Means here uſed, and the Effect? And in whoſe Hand but God's, could ſuch incompetent Inſtruments produce ſuch Ends? In reality, we not only confeſs his Preſence and Agency in the great and extraordinary Phænomena; but ſee and admire it every where, in the moſt ordinary ones. Nor does this imply any thing to the Diſadvantage of Reveal'd Religion; which is a Point quite foreign to the preſent Purpoſe. The Inſpiration and Prophecy we have ſpoke of is all natural, and ordinary; and does not any way preclude *the Deity* from more extraordinary, and miraculous Manifeſtations of his Will. On the contrary, if weak Man can do ſo much, acting ſubordinately to certain Laws of Nature, and by means of others; what may we not conceive of the Author of thoſe Laws, whenever in the Wiſdom of his Councils, he ſhall think fit to interpoſe: as, in the two great Diſpenſations whereof the ſacred Writings ſpeak?

BUT, if we have not made Philoſophy encroach too far on Religion; it may, perhaps, be objected, that we have made Religion of too much Concern in Philoſophy; in that we are continually recurring to the dernier Reſort, the Deity; which is held unphiloſophical.——But let it be conſider'd what it is to *philoſophize*; and whether our *Theories* amount to any thing more, than Enumerations of Laws, *i. e.* Actions, of the Creator? 'Tis certain, all the Structure and Œconomy diſcover'd by Diſſection, Microſcopes, Injection, *&c.* furniſh no more ſcientifical Account of the Origin of an Animal, than of a Spark of Fire. The uſual Syſtem of Generation amounts to no more than Augmentation; as it ſuppoſes the Animal already form'd, and only undertakes to enlarge, and ſhow how it arrives at its Bulk. An Animalcule is to be given us, either *in ſemine*, or *in ovo*, or we labour in vain; Aſſimilation being all the Generation we have any Idea of. We find our ſelves loſt and bewilder'd, when we come to think "How the dim Speck of Entity began," and here begin to confeſs, and mourn the Imperfection of our Knowledge. As if there were any Difficulty here, which did not equally obtain in every Step of the Proceſs. All the difference is, in the one Caſe we are ſenſible we only know the *What*, and in the other we alſo think we know the *How:* Which is a Deluſion: And were it not for the Paradox, one might almoſt affirm, that we know thoſe Things beſt, which we think we know the leaſt. For that here we more immediately ſee the real Cauſe, without the Cloud and Embaraſs of Occaſions, which at other times confound us. Occaſions, are Cauſes, with reſpect to us, who only act at ſecond hand; and the great Source of our Error, is, that we can't eaſily ſee thro' 'em to the real Cauſe. Whence, the greater number of Means and Occaſions we perceive; the further is the Cauſe apt to be involved, and the more Attention is required to extricate it. And by this way alone can Philoſophy lead to Atheiſm.——Our Knowledge, in effect, is all relative; it reſpects our ſelves, and our uſes, either more or leſs immediately; and is chiefly applied in the Arts, and Affairs of Life, where Occaſions are Cauſes: And hence we take a Tincture, which we carry with us thro'out; and apply, unawares, the ſame Notion when we come to philoſophize, where we are leſs intereſted, and conſequently our Knowledge purer and more abſolute. And thus we are betrayed fatally to confound *Art* with *Nature*; *Firſt Cauſe* with *Second*; *God* with *our ſelves:* all which muſt be done, ere the Philoſopher can commence Atheiſt.

THIS not diſtinguiſhing between Cauſes and Occaſions, has produced an infinite deal of falſe Refinement; to the great detriment of our moſt obvious and palpable Knowledge. We continually over-ſhoot the Mark; and looking too far, miſs ſeeing what is cloſe to us. We are willing to leave God out of the Affair as far as we can, and only have recourſe to him when we are at a pinch. He is rarely wanted, unleſs now and then, for a Miracle, or ſo. The Deity is not to interpoſe, *niſi dignus vindice Nodus*, till we have occaſion for him; *i. e.* till the Caſe becomes ſo obvious and glaring, that the Charm is broke, and we are forced to ſee him in ſpite of all our Prejudice. The Occaſions are ſo viſibly inadequate, that our Conſcience cries out, and neceſſitates us to look to and confeſs a Cauſe.——But, tho we be well enough contented to find him at the End of the Chain; alas he muſt be alſo preſent at every Link, or the Whole will fall to pieces. He is not more concern'd in forming the original *Stamen* of a Fœtus, than in nouriſhing, aſſimilating, or bringing it at length to Light. We can as eaſily conceive the firſt Formation of a piece of unorganiz'd Matter into an Animal, as any other Production of Nature; or even, as we call it, of Art. Generation is effected after the ſame manner as other Arts; and the ſame Principles that will account for the making of a *Statue*, will account for that of a Child. If the Figure of a Man ariſe out of a Maſs of Clay; is it by any other Operation than that of Nature, which according to the Poſition of the Hand, determines the Parts of the Clay to move in this Direction, or that; according to certain Laws of Motion, and Percuſſion? And if the ſame be afterwards harden'd, upon ſtanding to the Fire; is it not by the ſame Nature acting by certain other Laws, the Set or Collection whereof makes the phyſical Proceſs called *Exhalation?* The Hand, you'll ſay, was the Occaſion. But what is an Occaſion? I doubt we have no juſt Idea to that Word; and that it implies ſomewhat of a Contradiction; at leaſt, if any thing of Cauſalty be denoted by it. Conſidering that we ſay, Light is the Occaſion of Shadow, Joy of Sorrow, and every thing of its Contrary. If a piece of Phoſphorus, upon becoming contiguous to Air, immediately begin to ſmoke, and produce Fire and Light, with all the wonderful Phænomena thereof, as Colour, Refrangibility, Reflexibility, alternate Fits of eaſy Refraction and eaſy Tranſmiſſion, have different Powers inherent in the different Sides of its Corpuſcles, be reſoluble by a Priſm into all the Appearances of a Rainbow, exhibit the Species of Objects, act on and conſume Bodies, give Senſations of Heat, Pain, *&c.* and all theſe Properties permanent, and immutable for ever; What a Syſtem of Laws, what an infinity of Springs muſt be play'd for all this? No Circumſtance whereof is in our hand, beſide that of Contiguity or Non-contiguity with the Air: which, for our own Glory, we dignify by the Name *Occaſion*, and ſuppoſe ſomething in it analogous to *Cauſe*; and thus put our ſelves in ſome meaſure on a footing with the Almighty.——We know, without Light the viſible Univerſe would ceaſe to be; and without Heat, all Motion and Action muſt be at an End: So that it may even be ſaid to be owing to Fire, that there is a World. And yet how eaſy is it to produce what thus contains in it all Things! In effect, Fire is an *Occaſion*; and contributes juſt as much to the Exiſtence of the World, as we do to that of Fire. When we are doing, we might as well go on, and make our ſelves the Cauſes or Occaſions of the Univerſe; which we are, in the very ſame Senſe, as of any one Phænomenon in it. And thus, the ſame Principle which appear'd ſo deſtructive to Religion, is found equally ſo to Philoſophy. So conſiſtent is the Nature of Things! one Error is ſubverſive of almoſt all Truth: One Wheel amiſs in the Machine of Knowledge, makes the whole a Lye.

OF this, many of the Antients ſeem to have had a juſter Notion than we; as, in effect, they may be ſaid to have had more Religion than we.——Their Mythology, which is ſuppoſed to be their Phyſics, ſpeaks of nothing elſe but God, under various Forms and Shapes, *i. e.* in various Views and Relations. The Poets, from whom it was taken, firſt perſonified God, or the firſt Cauſe; and then his Attributes. His *Power* they called *Jupiter*, which they conceiv'd as his reigning Attribute; his *Juſtice* was *Juno*, the Conſort of Power; his *Wiſdom*, *Minerva*, the Offspring of *Jove*'s Brain*, *&c.* And thus it is they are to be underſtood, when they

* *Vid.* Boſſu, Traité du Poëme Epique, L. i. c. 2.

ſay

ſay *Jupiter* did ſo, and ſo; *Juno* perſecuted the *Trojans*; *Minerva* inſtructed *Telemachus*, &c. which ſeems to be all the Polytheiſm the Inventors were guilty of; tho after-Ages, not perceiving that this was the Work of Poetry and Fiction, abſurdly took it in another Senſe.

IN effect, the whole Phyſics of the Antients, was no other than a Theology; as all juſt Phyſics ought to be. I may even add, that the making a Difference between the two Sciences, and erecting 'em into Provinces independent of, and oppoſite to each other, has proved moſt pernicious to both; and been the great Source both of Irreligion and Ignorance; which will never be dry'd up, till the two be reſtored to each other, and laid together again. To run any length in either of 'em, without having recourſe to the other; as the generality of Authors affect to do, is downright inconſiſtency. Some of our Syſtems of Theology, one would take for pure Inſpiration thro'out; as if the Authors ſuppoſed they could know any thing of God, otherwiſe than by means of Senſe, and Phænomena: or as if Enthuſiaſm it ſelf did not pre-ſuppoſe Senſe, or could ariſe without it.——And, on the other hand, ſome Treatiſes of Philoſophy ſeem to have refined God out of the World, by whom all things in it ſubſiſt; and which, in *Seneca*'s Philoſophy, was no other than God himſelf *. They have made us an Univerſe ſo fine, that it may ſtand of it ſelf, withoutany God, *i. e.* without any Cauſe, at all: Occaſion is the higheſt Cauſation they require. This is to abſtract with a witneſs; to diſtinguiſh the Knowledge of the Cauſe from that of the Effect, and *vice verſâ*: whereas there is no knowing any thing of either, other than by their Relations to each other.

I MAY add, that the further either of theſe Sciences is carried, on this footing, the more idle and extravagant it will become; and that the one tends to downright Madneſs, and the other to downright Atheiſm. On the one hand, to make a Syſtem without a God, is nothing leſs than to be a God one's ſelf: The Author's Imagination muſt ſupply the Place of a Deity, by animating the Maſs, and giving Connexion to the ſeveral Parts and Members, *i. e.* by eſtabliſhing the Relation of Cauſe and Effect, which is the very thing that denominates God. Yet even ſuch imaginary Syſtem it ſelf, cannot ariſe without God, acting by his Laws upon the Imagination, in the Courſe of Things; ſo as to produce ſuch Effect: And thus what tends moſt directly to exclude God, does at the ſame time ſuppoſe him.-----And, on the other hand, to make a God without a Syſtem; that is, to give a Theology or Doctrine of God, without a Phyſiology, or that of the World, is directly to make a God, not to find one. 'Tis to make an Effect antecedent to its Cauſe: Tis to do, I am aſham'd to ſay what!

I AM afraid I may ſeem to have been too long abſent from my Subject; but it has been all along in my Eye, and a little Recapitulation will convince the Reader, that we have not wander'd far out of the way.——We have ſhewn whence all our Knowledge originally riſes: that Senſation is its only Source; that what comes this way, comes by the Agency of the Divine Being: that it is further modified in the Memory or Imagination, where new Aſſemblages are frequently made, which is called *Invention*; that it is continually altering, by the Admiſſion of new Ideas from without; but ſtill remains ſubject to the Laws impoſed by the Creator, ſo that nothing happens therein, but in conſequence of ſuch Laws.——Thus far the Mind appears merely paſſive: And thus it ſtands with reſpect to the *Matter* of all Knowledge and Art.——It remains, now, to conſider its *Form*, or that whereby ſuch Knowledge becomes *Art*, *i. e.* becomes ſubſervient to human Purpoſes, and under the Direction of human Reaſon.

HERE, therefore, a new State of the Mind, *Agency*, and a new Faculty thereof, *Reaſon*, come in play: the Foundation and Office whereof, will be aſcertain'd, by inquiring, What there is in the Artiſt's, *e. g. Homer*'s, Mind, that concur'd with his Inſpiration or Invention, to the Production of his Poem? This will be found to reſolve into, *firſt*, an Inclination, or Deſire to produce ſome Piece, in the way of a Fable, that ſhall ſtrongly repreſent the Miſchiefs of Diſcord among Confederates; and, *ſecondly*, a Knowledge of the Means neceſſary to that End, or an Acquaintance with certain Rules and Meaſures which tend to produce ſuch Effect.

THE firſt is a *Moral View* or *Motive*, which has already been laid down as the Spring or Principle of all human Action, and which is founded on the Apprehenſion of Good or Advantage to ariſe from ſuch Poem. The ſecond, *viz.* the Knowledge of the *Means*, ſtands on the common Footing of the Knowledge hitherto diſcours'd of.

THE *Means* and Meaſures of an Art, make a kind of preliminary Doctrine, neceſſary or conducive thereto, called the *Theory of the Art*; which, alſo, in one Senſe, may be conſider'd as another *Art*, diſtinct from the former: At leaſt, to come at it is the Buſineſs of another Art.——If, for inſtance, a certain Poſition, or Set of Motions of the Body, be conſtituted by Nature the Occaſion of a poetick Inſpiration; and ſuch and ſuch Images and Ideas ariſing herefrom, be conſtituted the Occaſions of ſuch and ſuch Paſſions in the Mind of a Reader, and ſuch and ſuch Views conſequent thereon, *viz.* an Averſion to Enmity, and Contention: To form an Art productive of theſe Effects, we muſt firſt ſee and obſerve ſuch or the like Effects, to ariſe from ſuch or the like Cauſes; and argue or infer, that 'tis probable theſe Motions, or theſe Images, are the Occaſions thereof: and conſider and collect the Order, Manner, and Circumſtances thereof, to form the *Art*, or *Method*.——So that we have here, as before, 1°, *Matter*, *viz.* Phænomena, firſt furniſhed by Senſation, and preſerv'd in the Memory; 2°, *Form*, ariſing from the Moral View, which led us to frame an Art, and in order thereto, to conſider and dwell on the Phænomena, compare 'em together, and infer ſomething from 'em.—It appears, therefore, that we have two Arts of Poetry, very different from each other; coming from different Cauſes, tending to different Purpoſes, and rarely found, in any degree, in the ſame Perſon. The firſt Art *Homer* has in perfection, the ſecond, *Ariſtotle*.

BUT for all their difference, the two are really of the ſame general Nature, and Kind; and only differ in point of Degree, and Subordination; as they are nearer to, or further from, the Principle of all Knowledge and Art, Senſation.——*Homer*, we have ſhewn, was inſpired: He derived his Art only from Nature acting on him in the ordinary Courſe of Things, and firſt preſenting Objects to his Senſe, then to his Imagination: And others are inſpired from him, *i. e.* derive the Inſpiration from Nature thro' his means: among whom is *Ariſtotle*. Nature, as ſhe appears to the Senſes, is *Homer*'s Subject: as ſhe ſhews her ſelf in *Homer*, is *Ariſtotle*'s; by which time the Inſpiration is grown a degree cooler, and leſs forcible, and the Ideas thus excited at ſecond hand moving the Mind leſs, it can attend more ſteadily to 'em, and perceive their Relations better. In the firſt it falls like Lightning, immediately from Heaven; the ſecond may be compared to the Reflexion of the ſame in a Mirror. The reading of *Homer*, *i. e.* the exciting and calling up his Ideas and Images, does, as it were, impregnate *Ariſtotle*'s Imagination; and tranſplant the Poet's whole Nurſery into the Philoſopher's Garden, to be further cultivated. Accordingly, *Ariſtotle* applying his Apprehenſion and Reaſon to 'em, and examining 'em cloſely on all Sides, perceives divers Relations and Analogies between 'em, which *Homer* was not aware of; and which the Warmth of his Imagination, and the quick Succeſſion of new Ideas, would not give him room to attend to. Theſe Analogies he calls *Rules*, or *Laws*; the Aſſemblage or Syſtem whereof, make what we call *Ariſtotle*'s *Art of Poetry*.

* Totum hoc quo continemur & unum eſt & Deus; & ſocii ejus ſumus & membra. Epiſt. 92.

THE like Proceſs might be obſerv'd in the ſeveral other Arts. Thoſe we have hitherto chiefly kept to, have been of the ſymbolical Kind: we ſhall here give an Inſtance in what we call the real Kind, viz. *Architecture*. ——An *Athenian* Sculptor, then, obſerving an Acanthus ſhooting up under a Baſket; is pleas'd with the Figure it preſents; and taking the Hint, invents the Capital of a Column on the Model thereof: And by a number of like Steps, an entire Order gradually aroſe; and, in time, a whole Art.-----Things thus advanced; and another Perſon ſeeing a Building framed after ſuch manner; he attentively examines the ſeveral Members, their Forms, Proportions, *&c.* and puts 'em down in writing: And thus does another poſterior Art ariſe. And between the two, there ſtill remains the Subordination already obſerved between the Means, or Occaſions of producing 'em; *i. e.* the Rules thus formed being couched in Words, or Language, ſupply the Office of the external Objects they were originally deriv'd from, and prove Occaſions of raiſing Ideas or Images in the Imagination of future Artiſts, to be imitated in the proper Materials.

THE Arts, then, of Poetry and Architecture, come firſt in at *Homer*'s, and *Callimachus*'s Senſe, in the ſimple Quality of natural Phænomena, or Objects; which meeting with other Ideas in the Memory, or Imagination, and coming to be compared and combined therewith, by the Agency of the Moral View or Principle which ſuggeſted the making of a Poem, *&c.* as advantageous and deſirable; new Productions ariſe, *e. g.* a Poem, or a Building: which coming at length under the Cognizance and Conſideration of Reaſon, certain Relations or Analogies are diſcovered therein, which tend to propagate, and produce the like at any time.-----Reaſon returns Rules for Matter; which Rules, prove like the Philoſopher's Stone, which tends to turn all Materials it is applied to, into Gold; and the Materials thus tranſmuted, like the pretended multiplicative Virtue of the ſame Gold, from every thing they are applied to, produce Rules again.

REASON, in effect, which is the laſt Faculty the Matter of Art arrives at, is the firſt from which the Form or Rules thereof, which are to propagate it, ariſe. In which view, Reaſon may be laid down as the Principle of this ſecondary Art, or Theory; as Imagination of the primary one, or of the Matter. We ſtill ſee the Effect of the firſt Laws, even in the latter Art: External Objects ſtrike the Senſe and Imagination ſo ſtrongly; that they reach to Reaſon; which, like an infinitely elaſtick Subſtance, reflects 'em back again; and thus they again grow into Objects of Senſe: and ſo in a Circle.

THIS ſeems to make the two Arts differ very widely: And as Reaſon appears our higheſt Faculty, (inaſmuch as 'tis this alone that tends to produce, and multiply) and accordingly, all our Knowledge appears proportionably higher and purer, as Reaſon is more concern'd therein: the Rules or Theory of an Art, appears of infinitely nearer Conſequence than the Matter thereof. The former is in ſome Senſe active, and, like the Almighty Mind, tends to produce new Things, new Worlds, new Syſtems without end; the latter is mere Paſſion, and ends in bare Brute Perception.

YET, *Ariſtotle*'s Rules, it muſt be obſerv'd, do not tend to produce Poetry; I mean, not the Matter of Poetry; but only the Form. *Ariſtotle*'s Art is not the Art of Poetry in that Senſe; as its Rules don't tend to produce the Enthuſiaſm. They only give the human Part, and relate what Reaſon obſerves in the Productions of the Imagination, *i. e.* what there is in 'em that is a proper Object of this laſt Faculty, and comes under its Notice. In effect, Poetry is only ſubject to *Ariſtotle*'s Rules, as there is Reaſon, not as there is Inſpiration or Invention in it.

THE Source of Poetry, we have obſerved, lies out of Poetry, in a higher Ground; and to turn the Stream upon us, is the Buſineſs of this other Art of Inſpiration. The immediate Inſpiration, is not ſo immediate as we might imagine. It is not the ultimate Principle of Art, but is it ſelf ſubordinate to another further, or purer Art; ſo that we muſt not have only Art and Rules to produce Poetry, but alſo to produce the Principle thereof, Inſpiration, or Invention. And the ſame will hold of the Rules of this laſt Art, themſelves, which will require others; and ſo *in infinitum*. At leaſt, the Series will be infinite, if we only take our ſelves, and our own Agency into the Account.-----

TO clear up this a little farther; it is to be obſerved, that the Art, *e. g.* of Poetry, is not only the Reſult of another higher Art, as above laid down; but, as it conſiſts of Matter and Form; theſe are each of 'em the Subject of a particular Art, and each of 'em require another higher Art to produce 'em.-----The Means, for inſtance, neceſſary to Inſpiration, or the Invention of Images, make one Art; and thoſe for their Application to the preſent Purpoſe, another. So that the Art of Poetry reſolves it ſelf into two ſubordinate ones; the firſt of which may be called *the Art of Invention*, the other *the Art of Judgment*, or Criticiſm: each of which has all the Characters of the general Art; is come at like it, produces new Objects like it, and reſolves like it into Matter and Form.-----Nor does the Matter end here: For as each of theſe ſubordinate Arts, conſiſts, again, of Matter and Form; each of 'em reſolves lower into two other Arts: and the ſame may be ſaid of each of theſe; and ſo on. So that there is really an infinite Series of Arts, previous to any one, and acceſſory thereto; all diſtinct from each other, tho all of the ſame general Nature and Kind, and only differing in Point of Order, or Subordinacy. They ariſe ſubordinately from the ſame Cauſe, and tend ſubordinately to the ſame End: Which Difference, or Subordination, as already noted, ariſes only from their greater, or leſs diſtance from the Principle of all Knowledge, Senſation.

UPON the whole, ſenſible Nature furniſhes the Matter of them all, by means of the Imagination; and moral Nature the Form, by means, or light of Reaſon.-----The former Propoſition has been ſufficiently diſcuſs'd. It remains to inquire a little further into the latter: For, *that Reaſon furniſhes the Means*, &c. muſt be further qualified, ere it be receiv'd.-----Our Reaſon, it is to be obſerv'd, does not perceive any neceſſary and immediate Connexion between the Means, and the Effect: for there really is none. Conſequently Reaſon cannot be the Author of 'em; in regard, the Medium is wanting whereby it could poſſibly attain 'em. So that they muſt be procured by ſome other Canal; which will at length be found to end in Senſation. In effect, ere we know that ſuch Means conduce to ſuch End, we muſt firſt have obſerved, or found it ſo by Experience. Our Memory ſuggeſts to us, that ſuch or the like Cauſes, have been follow'd by ſuch or the like Effects; which is the only Foundation we have to expect any thing from 'em on the preſent Occaſion.----Thus, if *Homer*'s Reaſon direct him to retire into a Place free of Noiſe and Diſturbance, at a time when his Mind is clear and in due Temper; and there to apply himſelf with Attention and Earneſtneſs, to think on his Subject: In conſequence of which Means, new Ideas and Images preſent themſelves; ſome more immediately relative to the preſent Purpoſe, others leſs: Whence comes all this, but that *Homer* remembers, ſuch or the like Ideas as are now wanted, to have aroſe upon the uſe of ſuch or the like Means? And if, among the Crowd of Images, he chuſes only ſuch as are moſt proper, and immediately conducive to his End, and throw aſide or expunge the reſt; whence is this, but that he remembers ſuch, on former Occaſions, to have contributed more fully to Ends like his own; than ſuch others? So that the whole Proceſs appears to be little other than *Remembrance*; which, we know, reſolves into Senſe.

BUT,

BUT, Memory, it is to be here noted, deals only in *paſt* Things. It informs us, that on ſuch an Occaſion, ſuch Means, under ſuch Circumſtances, produced ſuch Effects: But its Notices are merely narrative, or hiſtorical; and relate only to thoſe numerical Means, Occaſion, Circumſtances, *&c.* which can never happen again. So that Memory ſpeaks nothing to the preſent Caſe; nor gives any Directions how the particular Purpoſe now in view is to be attain'd. Its Language is only this, "Such Means did produce ſuch and ſuch "Effects."-----To make the Application of paſt Things to preſent, is the Office of Reaſon; which comes in where Memory ends; and ſubjoins, That "if ſuch Means have done ſo, ſuch others will now do ſo." And conſequently 'tis Reaſon that, in ſtrictneſs, preſcribes the preſent Meaſures.

OUR Inquiry now draws towards an Iſſue; and it only remains to ſhew, in what manner Reaſon attains this End, *i. e.* what farther or higher Means there are, whereby it is enabled to furniſh Meaſures for the preſent Exigent, from the Circumſtances of paſt ones?——This it effects by certain Perceptions of *Similitude* and *Diſſimilitude*, *Parity* and *Imparity*, *Congruity* and *Incongruity*, between former and preſent Means, Occaſions, *&c.* By virtue of theſe, the Mind infers, argues, or preſumes, That "inaſmuch as ſuch Means were followed by ſuch "Effect; ſuch others, by parity of Reaſon, will be followed by ſuch others:" And that "as there are ſuch "and ſuch Differences between former and preſent Occaſions and Circumſtances; there muſt be ſuch and ſuch "other correſpondent Variations in the preſent Meaſures, to keep up the Congruity." All which reſolves into that comprehenſive Word, *Analogy*.-----Thus it is found, that every *Means*, every Step of an Art, includes what has been already ſhewn of the whole Art; and conſiſts of *Matter*, furniſh'd by Memory, from Senſe and Obſervation; and *Form*, furniſh'd by Reaſon, from Compariſon, and Analogy.

AND thus it is Reaſon that makes all our hiſtorical Knowledge of any ſignificancy to us. 'Tis this that makes former Caſes ſubſervient to the preſent Occaſion. We may look upon this, as the Inſtrument or Faculty of transferring; whereby the Effects of former Times and Places, are brought over to the preſent ones. Without this, Senſe would loſe its chief uſe; and Memory, with all its Copia, be no other than uſeleſs Lumber.-----'Tis this Faculty alone that arranges our ſenſible Ideas into any thing of Subordinacy. Memory only preſents 'em ſuch as they firſt appear'd; wholly diſtinct all, and independent of each other; being connected by nothing but their Compreſence, or Co-exiſtence in point of Time and Place. The Eſtabliſhment of all other Relations is the Work of Reaſon; which, from theſe few ſenſible Relations, infers numerous others, *e. g.* from the Compreſence of two Things, in reſpect of Time, Place, *&c.* it concludes that ſome new Appearance perceiv'd in the one, was occaſioned by the other; and therefore, that there was ſome Power in the latter, by which this was effected, *&c.* And thus it is we come by the Relations or Perceptions of *Cauſe*, *Effect*; *Action*, *Paſſion*; *Property*, *Quality*, &c. So that, to this Faculty of Reaſon, we owe the whole Science of *Phyſicks*; which is no other than the Doctrine of Cauſes: At leaſt, the Form thereof. The Matter, *i. e.* the Senſations themſelves, being furniſhed by Senſe, conſtitute *Natural Hiſtory*, the Baſis of all Knowledge whatever.

WE are now got to the Top of all our *Natural* Faculties, *Reaſon*; and the moſt refined of all our Science, *Analogy*.-----It remains to obſerve, that with this Natural Reaſon, is connected Moral Inclination. In the Caſe, for inſtance, of *Good*; to the Voice of Reaſon repreſenting a Thing as ſuch, is connected a *Deſire* or *Inclination* towards the ſame; which is the Spring or Principle of all human Action, or Operation; and commands a number of ſubordinate ones, the application of all which conſtitutes what we call the *Purſuit* of ſuch Good.

AND thus we are got to the bottom of all our moral Faculties, Deſire or *Inclination*.-----Hence, as Reaſon is the End of Paſſion, or Perception; Inclination is the Beginning of Action: The one terminating in the Apprehenſion of Good, where the other commences. And again, as the Perception of Analogy is the ultimate Effect of Science; the Inclination ariſing by means hereof, is the Beginning of Art: the two being join'd, and as it were, inoſculated in ſome middle Point. And thus external or phyſical Things, come to influence or produce internal, or moral ones; thus the whole Effect of ſenſible Nature is applied to moral Nature. And thus do *Phyſics* take hold of *Ethics*; God, of Man.-----Hence, moral Knowledge may be conſider'd as a kind of Medium between Perception, and Inclination; Action, and Paſſion; Science, and Art: Accordingly, it poſſeſſes a middle Region in the Orb of Knowledge; as being that by whoſe Mediation, a Communication is made between the two; and the Effects of the one imparted, or handed over to the other.

BUT, to determine the Nature and Origin of *Analogy*; and ſhew how theſe Notices or Perceptions of *Similitude*, *Parity*, &c. by means whereof Reaſon makes her Concluſions, are arrived at; and whether they ariſe in the ſame general manner as other Ideas, by the Agency of the divine Being, (the human Mind remaining wholly paſſive therein) or whether we perceive or diſcern 'em immediately, by ſome intuitive Power inherent in the Nature of the Mind; and ſo are active therein----will need a little farther Attention.

IT muſt be allow'd, then, that theſe Perceptions, Similitude, *&c.* are no proper Objects of Senſe: They do not come from without, as any part of the Matter of our Senſations: they are of no Colour, Figure, Solidity, or the like. Nor do they ſeem to ariſe immediately, and neceſſarily, upon any Objects being preſented; but rather to require ſome Action, or Operation of the Mind, to produce and give 'em being. The Truth is, they are not any immediate Objects, but reſult from a Compariſon between ſeveral; which Compariſon ſeems to be the Work of the Mind, bringing one to the other, and conſidering their Agreement and Diſagreement.

BUT, tho this bids much faireſt for Action of any thing yet alledg'd; yet will the whole hereof be found to reſolve into Senſe, and Memory.----If, ſeeing a Sword run thro' a Perſon, I find he dies upon it; and ſeeing afterwards a Spear run in like manner thro' another, I conclude he will likewiſe die: Whence is this, but that in the latter Caſe, ſome of the Circumſtances of the preſent Tranſaction, do neceſſarily recal the Memory of the former ones: Since, ſo far as they were alike, they were really the ſame? Conſequently, as the Idea of Death was connected to the former; it belongs equally to the latter. In effect, in two ſimilar things, ſo far as I ſee a Similitude, ſo far I ſee the ſame thing in both. Similitude is only a Repetition: and therefore what agrees to the one, muſt, ſo far as their Similitude goes, agree to the other, for the ſame Reaſon that it does to either. Hence, if I am paſſive in *remembering* the Sword, and paſſive likewiſe in *ſeeing* the Spear; and the one be in ſome reſpects the ſame with the other: I am not active in perceiving that Sameneſs: ſince 'tis only the Perception of one thing twice over. And my knowing it to be the ſame now, is only my remembring it to be what I had ſeen before; with this difference, that the Power which firſt repreſented it to me abſolutely; does now repreſent it with this additional Circumſtance, that I had ſeen it before.

AGAIN, if I argue or conclude that what agrees to, or ariſes from one thing; will do ſo in another thing ſimilar only in ſome Circumſtances: This is founded wholly on a Preſumption, that the Agreement reaches to thoſe Points upon which the former Effect depended. So that all phyſical Cauſation, in reſpect of us, is mere Preſumption. Accordingly, the great *Regulæ philoſophandi* eſtabliſhed by Sir *I. Newton*, that "Effects of the "ſame kind, ariſe from the ſame Cauſe:" and that "Qualities which agree to all the Bodies hitherto known, "agree univerſally to all;" are at bottom only Preſumptions. Yet are they juſt phyſical Laws; and the beſt the Subject will allow of.

THUS far, therefore, we ſee but little that looks like Activity, even in the Faculty of Reaſon. But Reaſon has not been yet ſhewn in its Height. Tho it have its Origin in phyſical Matters; and ſhew it ſelf firſt in the Eſtabliſhment of Cauſes, Properties, &c. it reaches much higher, and is ſeen in its Perfection in Metaphyſicks; where, making its own Productions its Object, it proceeds to examine the Nature and Eſſence of ſuch Cauſe, Property, &c. And hence the Doctrine of Quality, Quantity, &c. in the General or Abſtract.——Nor does the Matter ſtop here; but the Mind ſtill proceeds to erect a new and moſt magnificent Science of Quantities, Analogies, Proportions, &c. hereupon: founded on this Principle, that "ſo far as a thing unknown, agrees or is like "to another thing known; ſo far is ſuch former thing, its Nature, Effects, &c. known:" A Science infinitely extenſive, and productive of infinite Uſes; as being that whereby Knowledge is applied, or transferr'd from one thing to another: And of infinite Certainty, as being founded on a ſelf-evident Propoſition.——It proceeds by Definitions, Axioms, &c. But as the Things themſelves which are its Subject, are only Abſtracts, which are but a kind of Shadows of real and ſenſible things; ſo are its Definitions, which cannot be ſaid to be Definitions in the ſame Senſe as thoſe of a Concrete, *e. g.* a Plant, an Inſtrument, or the like; inaſmuch as they do not excite any Image or Idea in the Mind. And hence that Difficulty under which the Writers of the Principles of Mathematicks labour, to give intelligible Definitions of *Unity*, *Multitude*, *Number*, *Part*, *Whole*, &c.

ITS *Axioms* are only Duplicates of ſome Propoſition, or the ſame thing expreſs'd in two manners; the one direct, the other implicit; properly call'd *Identical Propoſitions*.——Thus that Axiom, "The Whole is equal to its "Parts;" eaſily reſolves into this other, "The Whole has the Nature and Characters of a Whole:" which amounts to this, "A Whole is a Whole."

TO illuſtrate the Progreſs of the Mind in this new Scene: Suppoſe, for inſtance, a Ball, or Sphere; and let it be divided into two Parts.——Our Senſes do not inform us that the two Segments thereof are equal to the whole one: On the contrary, they repreſent them as very unequal; and 'tis Reaſon alone that finds their Equality. The Cauſe hereof, is, that the Figure, &c. of the divided Sphere, which are the things the Eye takes cognizance of, are very different from thoſe of the whole one; and that the Quantity or Subſtance, in which alone the Equality conſiſts, is no Object of Sight, but only of Reaſon; which informs us that the two Segments are ſtill really the whole Sphere, only exiſting with ſome variety in reſpect of Figure, Place, &c. Hence we find it neceſſary, *i. e.* included in the Nature and Notion of a Whole, that the Sphere be equal to its Parts; and thus, by analogy, pronounce the ſame Ratio univerſally between every Whole and its Parts, and ſo make an Axiom which is the Foundation of a new kind of univerſal Knowledge. In effect, to ſay that the whole Sphere is equal to its Parts, is no more than to ſay, the Quantity or Subſtance is not altered by any Alterations made in its Figure, Place, Number, &c. which is as much as to ſay, that the Subſtance is the Subſtance, the Sphere, the Sphere.

FROM ſuch Axioms it proceeds to *Theorems* and *Problems*; every one whereof is reſolvable into Theſis and Hypotheſis; each of which may be again reſolved into Axioms or Identical Propoſitions, which is called *Demonſtrating*. In fine, all Demonſtration ſuppoſes Identical Propoſitions, and turns on 'em; and its Certainty ariſes from no other Principle, but the Identity or Sameneſs of the Thing implied in ſuch Propoſitions, with the Thing expreſs'd.

IT appears then, that the whole Proceſs conſiſts in abſtracting, or ſetting aſide the ſenſible Idea that gave the firſt Occaſion, and conſidering the Relations thereof by themſelves, as if they had diſtinct, independent Exiſtences. By thus excluding the Conſideration of the phyſical *Ens*, Senſation and Imagination are of courſe excluded, with all the Action and Inſpiration annex'd to 'em; and thus is Reaſon left in full play, without any thing to ſuperſede, or divert it.——Thus we may be ſaid to make a new World, and furniſh it with a new Set of Creatures; and a new Doctrine, which is, as it were, the Shadow of the former. Metaphyſicks, and Mathematicks, in effect, are the Science of *Entia humana*, or *rationis*, as Phyſics of *Entia naturæ*, or *ſenſus*.

BUT ſuch Abſtracts, *e. g.* Quantity, Meaſure, Weight, &c. tho no immediate Objects of Senſe, have yet a Connexion with things which have, whereby they become of the utmoſt import in the World. There is that Relation eſtabliſhed between the Faculties of Senſe and Reaſon, that tho the Objects of the one be not cognizable by the other, yet the Communication between 'em is by the all-wiſe Creator made very near and intimate: Such Dimenſions, Weight, &c. are combined by him with ſuch Effects, Motions, Reſiſtances, &c. and prove the Occaſion of ſuch and ſuch Effects: which is the great Principle of all human Action, and all truly artificial Production in the World.

BY means of this Communication, the firſt Impulſe is brought back again from the higheſt pitch of abſtracted Mathematicks, to the firſt Objects of Senſe; from Fluxions and Differences, the fartheſt Parts of the *Pais d' infini* Reaſon has ever travell'd to, to the groſſeſt and moſt palpable Objects that ſtrike every Senſe. And thus are Action and Paſſion, Senſation and Reaſon, Art and Science, found to reciprocate, and produce each other.

HAVING thus diſcuſs'd the Nature, and Characters of *Art* and *Science*; it remains to ſettle the Notion of *a TERM of Art*; a Diction as little underſtood as any thing in Language.——Art and Science, we have obſerved, are Denominations of Knowledge under this or that Habitude; and Words are Repreſentatives of the ſeveral Parts thereof. The whole Compaſs of Words, in all their Caſes, is ſuppos'd equivalent to the whole Syſtem of poſſible Science; tho 'tis only a ſmall Part thereof that is actual, *i. e.* only a few of the poſſible Combinations are, or ever will be, made.

THE Buſineſs of Knowledge, then, is canton'd out among the Body of Words: but they don't bear equal Shares thereof. Being Creatures of our own, we have dealt with 'em accordingly; and made ſome more, others leſs ſignificant, at pleaſure: ſome ſtand for large Tracts, or Provinces; others for little Spots, or petty Diſtricts thereof. In effect, the Order wherein we attain our Knowledge, has occaſion'd us to make a kind of Sortment and Package, if I may uſe the Word, in the Matter thereof. Tho the Mind only ſees and perceives Individuals, which alone are the proper Objects thereof; yet it has a Power of combining and complicating theſe together, for its own conveniency: And hence its progreſs from Particulars to Generals; from Simple, to Complex.-----Hence we come to have Words of all Orders, and Degrees; from the Simplicity of an Atom, to the Complexneſs of the Univerſe. 'Tis pleaſant to trace the Mind bundling up its Ideas, and giving Names to the ſeveral Parcels; to obſerve, for inſtance, how it proceeds from the ſimple Idea, *Thinking*, to the more complex one, *Knowledge*, thence to the more complex, *a Science*, thence farther to *Scientifical*, &c.

INDEED 'tis very few of our Words that expreſs ſingle, or ſimple Ideas. The Reaſon is, that obſerving certain Relations to obtain between the ſeveral Ideas; as, of Cauſe and Effect, Subject and Attribute, &c. we don't ſo much conſider them abſolutely and independently, as under ſuch Circumſtances and Relations to each other. The great Readineſs and Propenſity of the Mind to combine, and bundle up its Ideas, and thus pay, or receive 'em in Parcels, has left us very few ſimple ones; I mean, very few Names which denote only one Idea. The Words *Atom*, or *Mathematical Point*, uſually imply ſeveral Ideas; in regard, we are led to take their Attributes, and Relations, into the Conſideration of the Subject: Thus we conſider the *Atom* as hard, heavy, and inviſible; as the Principle of phyſical Magnitude; as contributing to the Conſtitution of Bodies, &c. Even the primary Qualities themſelves, as *hardneſs*, *heavineſs*, &c. ſimple as they are in their own Nature;

Nature; are ſo far combined with particular Circumſtances, *e. g.* their Cauſe, Effects, *&c.* that their Names become none of the leaſt complex.

NOW, what we call *a Term*, conſider'd as to its Nature and Origin, is no other than "a Word which "denotes an Aſſemblage, or Syſtem of Ideas relating to ſome one Point, which the Mind artfully complicates "or aſſociates together, for the conveniency of its own Operations." Or, "a Word which comprehends ſeveral "Ideas under a certain Relation to each other, whereby they repreſent ſome complex piece of Knowledge to "the Mind for the conveniency," *&c.* Or, "it is a Word, which holds ſeveral different Ideas combin'd toge-"ther in a Relation ſuch as they appear'd under when the Mind firſt conſider'd 'em as a ſtanding Phæno-"menon, and took Meaſures to have 'em fix'd or retain'd in that Quality."

THE Effect of *Terms* is, that by virtue thereof, we are enabled to receive, or communicate Knowledge with more eaſe and diſpatch; foraſmuch as having proper Combinations thereof always ready made, we are ſaved the Neceſſity of beginning *de novo*, and detailing it in Individuals: much as in Arithmetick, to avoid the Embarraſs of a large Number of Units, we tell by Tens, or Sixties, or Hundreds: With the like View, on ſome occaſions, we make up certain Sums of Money in Rouleaus, or in Purſes; and thus pay and receive 'em, without the Trouble of telling or enumerating the Contents.

IN this Senſe of Term, we ſhall find little elſe but Terms in Language: Among *Nouns*, little beſide proper Names, which indeed are out of the ordinary Caſe of Language, as ſerving occaſionally to denote an hundred different Subjects. Yet even theſe ſometimes become *Terms*; as, when any particular Ideas become conſtantly attach'd to 'em, *e. g.* In *Mæcenas*, *Machiavel*, *Auguſtus*, *Atlas*, *Bucephalus*, *Buccentaur*, *Royal Oak*, *Argo*, &c. And among Verbs, very few but are Terms, except the general ones, *to be*, *to do*, and *to ſuffer*. As all the others ſuppoſe theſe, and modify or ſuperadd ſome farther Circumſtance thereto; they commence Terms of courſe: ſuch, for inſtance, is the Word *to moiſten*; which, as it carries a farther meaning than the bare Act of applying a Fluid to a dry Body; and denotes, *e. g.* the *Modus* of its Effect, and the Alteration ſuperinduced by it, *viz.* the ſoftening, lubricating, *&c.* is a good Term. So, *to ſtrike*, as it not only implies a certain Motion of the Arm, but this Motion, effected by the ſucceſſive Contraction and Dilatation of certain Muſcles, *&c.* has every thing that is eſſential to a Term. In the ſame Senſe, a *Staff* is a Term as much as a *Lever*; and a *Pin*, as an *Axis in peritrochio*.

THIS may look like ſtretching a Point, eſpecially to thoſe who are uſed to conſider Terms as Things, I know not how, quaint, and myſterious; and make a Term and a hard Word the ſame thing. But there is no Remedy: Complexneſs is the only Characteriſtic that will be found to hold good of 'em all; and if there be any other more ſpecifick and diſtinguiſhing Properties in moſt of 'em, as we ſhall have occaſion hereafter to ſhew there are, yet theſe, not being univerſal, cannot be made the Foundation of a juſt Philoſophical Definition. They may perhaps be introduced, to good purpoſe, into a popular one; as they afford a more uſeful and adequate Knowledge of the Subject ſo far as they do obtain.

THUS much relates to what we may call *Terms of Knowledge*, which are one degree more ſimple than the Terms of an Art, or Science; and were, for that Reaſon, pitch'd upon to exhibit the common Nature, and Origin of both. Theſe latter ariſe out of the former, by the Superaddition of ſome new Character, or Condition. They were before Members of the Commonwealth of Knowledge; but are now incorporated into ſome certain Province, or City thereof; where they become of farther Significance and Conſideration than before: that is, ſome new Ideas and Circumſtances are now taken into the Combination, which before did not belong to it.----A Term of Art, then, "is a Word that has a Meaning beyond its general, or ſcien-"tifical one; and this Meaning reſtrain'd to ſome one Art." Or, it is "a Word uſed to denote a certain "Combination of Ideas, under ſome peculiar Relation; retained arbitrarily in ſome Art, and either not uſed "in any other Art, or for a different Combination, or with other Relations and Circumſtances."

TO make the way a little clearer to the Philoſophy of a Term of Art, it is to be obſerv'd, that from the primary or literal Senſe of Words, we frequently, by Abſtraction, form a ſecondary, general, or philoſophical one, expreſſing only the Quality moſt predominant in the former, excluſive of the particular Circumſtances of the Concrete. Thus the Word *Spirit*, literally and primarily ſignifying *Breath*; we thence frame a more ſimple general meaning, and uſe the Word for any thin, ſubtil Matter whatever.----Now, Terms of Art are not immediately formed from the literal, or grammatical, but from the general, or philoſophical, Acceptations of Words; which are their proper Baſis, or the Ground-work they are erected on. The general or abſtract Senſe of ſome Word already eſtabliſhed, being found to agree to ſomething which we have occaſion to give a Name to; we take the Word in that Senſe, and ſuperadd the other Incidents and Circumſtances which the preſent Occaſions furniſh, thereto: which being different according to the different Matter and Subject of the Art, ſpecify the meaning of the Term in this, or that Art. So that the Word which, to raiſe it to a philoſophical or ſcientifical Senſe, was generaliz'd; to form a Technical one is again particulariz'd, or appropriated, and inveſted with new Accidents. Which falls in with the Difference above laid down between *Art* and *Science*.

THUS, the ſame Word *Spirit*, which literally ſignifies *Breath*, and philoſophically any ſubtil Subſtance, is technically brought to denote diverſe other things; as, in Anatomy, a thin animal Juice ſecreted in the Brain, and detach'd thence thro' the Nerves for the Uſes of Senſation and muſcular Motion: in Chymiſtry, the Exhalations of Bodies expos'd to the Fire: in Theology, the third Perſon of the Trinity: in Metaphyſicks, any incorporeal Agent, or Intelligence, *&c.* In all which, we ſee the ſame *Subſtratum*, *viz.* a fine ſubtil Subſtance; but this modified a great diverſity of ways: each of which is ſuſceptible, by farther Super-additions, of infinite more. And hence Legions of ſorts of Spirits, both in the human Body, the Chymiſts Laboratories, the Hierarchy, *&c.*

THE Notion of a Term will receive ſome farther Light from that of a *DEFINITION*; which is, as it were, the Analyſis thereof.----By *Definition* we undo, what was done in the *Term*; that is, we reſolve the complex Ideas into ſimple ones, or reſtore the Ideas from their new and artificial State, to their primitive and vague one. A *Definition*, then, may be defined, "an Enumeration of the ſeveral ſimple Ideas couched under "any Term, in the Relation wherein they ſtand to one another."-----We have already ſhewn, that Terms are Words which have peculiar and determinate Meanings, reſulting from a certain Combination of Ideas; in which view, a Term may be ſaid to be, "a Word that is capable of Definition;" *i. e.* of having its Senſe explain'd, and aſcertained by an Enumeration of its Properties, and Relations: by which it is diſtinguiſh'd from other Words merely grammatical, whoſe Meanings are general and indeterminate, and may be uſed with equal propriety in a thouſand Caſes. We can explain a Term: A Word is inexplicable: all we can do towards this, amounts not to Definition, but only to *Subſtitution*.

THUS the Idea attached, for inſtance, to the Word *Force*, is abſolutely incommunicable by means of any Language; we can only try whether the Party have it not already, under another Name; to which end we may tell him 'tis *Power*, or *Energy*, or *Vigour*; if he have Ideas for any of theſe, he'll take in that of *Force*, by its Relation thereto; if he have not, we muſt proceed to try him with more, and tell him 'tis *Forza*, or

Vis,

Vis, or *Efficacia*, or *Potentia*, &c. or 'tis βία, or ἰσχύς, *&c.* If none of theſe will do, it remains to try, whether he may not have it, without any Name to it; and ſay, 'tis "That whereby one thing, coming in "contact with another, moves, or ſhakes, or breaks it," *&c.*----If by any of theſe means he learns what *Force* is, he does not form any new Idea: he only learns a new Name; and finds that what he calls by one Name, others call by another; or that what he had never taken the Pains to diſtinguiſh by any Name, ſome others have. To get the Idea, he muſt have recourſe to Senſation, not to Language; it being a phyſical *Ens*, and only to be attain'd that way.

BUT the ſimple Idea called *Force*, being given; and coming to be afterwards modified or circumſtantiated by new Accidents added thereto, and thus form'd into Terms, in this or that Art; 'tis here in the Power of Language, alone, to excite 'em; by reſolving ſuch compound Idea into its ingredient ones, which being re-compounded or put together again in the manner aſſign'd by the Definition, gives the full adequate Import thereof.----Thus the Idea of *Force* being variouſly modified, and combined with other Ideas of *Centre*, *Attraction*, *Repulſion*, *Will*, *Machine*, &c. in the Words, *Central Force*, *Centripetal Force*, *Centrifugal Force*, *Neceſſity* or *Moral Force*, *Mechanick Power*, &c. we can, by Definition, arrive at the Meaning thereof; by having thoſe Circumſtances ſpecified, or ſuperadded to the Idea of Force.----In this caſe, there is no coming at the Idea by Senſation; in regard 'tis a Creature of our own, and does not exiſt any where without us, to make an Object of Senſe.

HENCE appears all the diverſity of Definitions; *Technical* ones, comporting only to Terms, as to *Central Force*; *Scientifical* or *Philoſophical*, to Qualities, as *Forcibleneſs*; and *Nominal* or *Succedaneous*, belonging to ſimple Ideas, as *Force*.

'TIS the various Aſſemblage of ſimple Ideas denoted by common Words, that makes all the Variety of Terms; as 'tis of Simples in an Apothecary's Shop, that makes the Variety of his Medicines.----The Analogy goes farther; and it may be ſaid that Terms, like Medicines, only differ from each other as their ingredient Ideas, and the Relations thereof do differ.----If theſe be not all rehearſed in the Definition, the Term or Medicine is not ſpecified, or diſtinguiſhed from ſome other, which may have all except that one or two omitted. Conſequently, ſuch one or two are the Characteriſticks of that Term; which may be explain'd in ſome ſort, by only enumerating thoſe Characteriſticks, and couching all the reſt under that other Term. This amounts to little more than the *Subſtitution* abovemention'd; and yet to this is reducible all that the Schoolmen teach of *Genus*, *Species*, and *Difference*.

BESIDE ſimple Words, which we have obſerved are, in their own Nature, inexplicable; there are divers others that become accidentally ſo: And ſuch are all the Data, or preliminary Principles of any Art, with reſpect to thoſe who confine themſelves to the Bounds of that Art. Thus, if it be demanded of an Apothecary, to define one of his Simples, e. g. *Mercury*; he muſt needs be at a ſtand, unleſs he be likewiſe verſed in Minerology; by reaſon it is putting him to explain a Datum, which his Art does not explain, but aſſume; the Explication thereof lying in another Province. For the Data or Principles of any Art, are only explicable from another, *e. g.* thoſe of *Chymiſtry*, *Pharmacy*, &c. from *Phyſicks*; *Phyſicks*, from *Phyſiology* and *Mechanicks*; *Mechanicks* from *Geometry*, &c. So that to explain *Mercury*, would to him be, in ſome meaſure, to explain a ſimple Idea. But aſk him to define *Calomel*, and he is prepared for you; and will readily enumerate the ſeveral Ingredients, and the manner of preparing it: which is the proper pharmaceutical Definition of Calomel.

HERE it may be obſerved, that the Words uſed in the Definition of a Term, do many of 'em repreſent complex Ideas; and conſequently ought themſelves to be defin'd, if we would have the Definition compleat. The Term has uſually divers ſubaltern ones; all which are reſolvable into it, and make part and parcel of the Knowledge held forth by it. Thus, if Calomel be defined, "A medicinal Pouder precipitated from "a Solution of crude Mercury in Aqua fortis, by adding thereto a Lixivium of Sea Salt; and then purified "by repeated Ablutions in a Filtre," *&c.* The Ideas, *Pouder*, *Precipitated*, *Solution*, *Mercury*, *Aqua fortis*, *Ablution*, *Filtre*, &c. remain to be explain'd, to furniſh the compleat Notion of Calomel.----But as this would be endleſs, and would defeat the Intention of a Definition; the Practice obtains, to ſuppoſe all other Terms known, except that particular one under Definition. By this means, we avoid the Embarraſs of bringing down every Word to its Principles, or ſimple Ideas; and acquit our ſelves by bringing it to the next complex ones: Since the bringing an unknown Term to ſeveral known ones, is a kind of indirect Definition.

SUCH is the Nature of a Technical Definition, which holds good or valid for thoſe of that Art, or Craft; who are to be ſuppoſed furniſhed with the neceſſary Data, or preliminary Notices. But to make a ſcientifical Definition, we muſt go ſtill lower; and bring down the Words, if not to their ſimple Ideas, yet to general or common ones. For it is to be obſerved, there are great numbers of complex Ideas current among moſt People, which therefore may be conſider'd as Data, and uſed as ſimple ones, for more conveniency ſake. All technical Apparatus, then, is to be here thrown by; and inſtead of giving five or ſix hard Words for one, the general Effect, and Meanings thereof are to be made uſe of. Thus, Calomel may be defined "a "white Pouder, which falls down from Quickſilver diſſolved in Spirit of Salt-petre, upon caſting Salt therein; "and is afterwards waſhed, again and again, by paſſing fair Water thro' it," *&c.* Where, tho ſeveral of the Words be complex; yet moſt People, in the ordinary Courſe of Life, have framed the complex Ideas belonging to 'em: ſo that they may be conſider'd as ſimple ones.----Yet the Definition can ſcarce be ſaid to be complete, even here: The general or philoſophical Senſe of Words, we have obſerved, is form'd from the grammatical one; and conſequently the Definition ought in ſtrictneſs to extend thither: The Solution, to be adequate, ſhould go as far as the Knot; the Analyſis as the Syntheſis.

THE Reader already begins to feel this Preface grow tireſom; and yet half the Buſineſs is ſtill behind. When ſo large a Work was to follow, he perhaps imagines he ſhould have been excuſed from a long Preface: and the like, probably, may the Author ſay; who, after ſo tedious a Work, cou'd not be over-fond of any ſupernumerary Fatigue. But, the Expediency of the Caſe, which ſway'd and determin'd the one; may ſuffice to ſatisfy the other. Several Matters were purpoſely waved in the Courſe of the BOOK, to be treated of in the PREFACE; which appear'd the propereſt Place for ſuch Things as have a regard to the whole Work. What has been hitherto inſiſted on, as well as what remains, immediately affects every Article in the Book; and tends, withal, to let a little needful Light into certain Points hitherto involved in great Obſcurity. I conſider a *Preface*, as a kind of Vehicle, wherewithal to convey the Reader commodiouſly from the *Title* into the *Book*. The Preface is a kind of Comment on the Title, the Book a Paraphraſe on it: Or, if you had rather, the Book is the Title *executed*, the Preface the Title *explain'd*.

HAVING, therefore, diſpatched the leading Words ART, SCIENCE, TERM, and DEFINITION; we proceed to conſider the Nature of a *DICTIONARY*.-----It were to be wiſhed that the many Adventurers in Print, who publiſh their Thoughts under this or that Form and Denomination, would frame themſelves a preciſe Notion of the Character and Laws thereof. There is ſomething arbitrary, and artificial in all Writings: They are a kind of Draughts or Pictures, where the Aſpect, Attitude, and Light, which the Objects are taken in, tho merely arbitrary, yet ſway and direct the whole Repreſentation. Books are, as it were,

Plans

Plans or Proſpects of Ideas, artfully arranged, and exhibited, not to the Eye, but to the Mind; and there is a kind of analogous Perſpective which obtains in 'em, wherein we have ſomething not much unlike Points of Sight, and of Diſtance. An Author, in effect, has ſome particular View or Deſign in drawing out his Ideas; either, nakedly to repreſent ſomething, or diſtort and ridicule it, or amplify, or extenuate, or diſcover, or teach, or prove, *&c.* whence ariſe divers kinds of Pieces, under the Names of *Hiſtories*, *Diſcourſes*, *Treatiſes*, *Eſſays*, *Inquiries*, *Examinations*, *Paraphraſes*, *Courſes*, *Memoirs*, *Burleſques*, &c. In all which, tho the Matter or Subject may be the ſame, the Conduct or artificial Part is very different; as much as a Still-Life from a Hiſtory, or a Groteſque, or a Nudity, or a Caricatour, or a Scene-work, or a Miniature, or a Profile, *&c.* Each of theſe Methods of Compoſition has its particular Characters, and Laws; and to form a Judgment of the Things repreſented, from the Pictures made of them, 'tis neceſſary we be able to unravel, or undo what is artificial in 'em, reſolve 'em into their former State, and extricate what has been added to 'em in the Repreſentation: That is, we ſhould know the manner thereof; whether, *e. g.* they be mere Nature, thro' this or that Medium, in a fore, or ſide-View, withinſide or without, to be ſeen from above or below; or Nature rais'd and improv'd, for the better, or the worſe.-----The Caſe amounts to the ſame as the viewing of Objects in a Mirror; where, unleſs the form of the Mirror be known, *viz.* whether it be plain, concave, convex, cylindrick, or conick, *&c.* we can make no Judgment of the Magnitude, Figure, *&c.* of the Objects.

'TIS beyond my Purpoſe to enter into the Nature of the ſeveral Methods of Compoſition abovemention'd. I ſhall only note, by the way, that the firſt Writers in each, mark'd and chalked out the Meaſures for all that came after them. The ſeveral Manners of compoſing amount to ſo many *Arts*; which, we have already ſhewn, are things in great meaſure perſonal, and depend on the Genius or Humour of the Inventors.

WERE we to inquire who firſt led up the way of *Dictionaries*, of late ſo much frequented; ſome little Grammarian, would, probably, be found at the head thereof: And from his particular Views, Deſigns, *&c.* if known, one might probably deduce, not only the general Form, but even the particular Circumſtances of the modern Productions under that Name. The Relation, however, extends both ways; and if we can't deduce the Nature of a Dictionary from the Condition of the Author; we may the Conditions of the Author from the Nature of the Dictionary. Thus much, at leaſt, we may ſay, that he was an Analyſt; that his View was not to improve or advance Knowledge, but to teach, or convey it; and that he was hence led to unty the Complexions or Bundles of Ideas his Predeceſſors had made, and reduce 'em to their natural parity; which is all that is eſſential to a Dictionariſt. Probably this was in the early Days of the *Phœnician* or *Egyptian* Sages, when Words were more complex and obſcure than now; and myſtic Symbols and Hieroglyphics obtain'd; ſo that an Explication of their Marks or Words, might amount to a Revelation of their whole inner Philoſophy: In which Caſe, inſtead of a Grammarian, we muſt put perhaps a *Magus*, a *Myſtes*, or *Brachman* at the head of Dictionaries. Indeed this ſeems the more probable; for that a grammatical Dictionary could only have place, where a Language was already become very copious, and many Synonyma's got into it; or where the People of one Language were deſirous to learn that of another: which we have no reaſon to think could be very early, till much Commerce and Communication had made it neceſſary.

WHEN a Path is once made, Men are naturally diſpoſed to follow it; even tho it be not the moſt convenient: Numbers will enlarge, and widen, or even make it ſtraighter and eaſier; but 'tis odds they don't alter its Courſe. To deviate from it, is only for the Ignorant and Irregular; Perſons who don't well know it, or are too licentious to keep it. And hence the Alterations and Improvements made in the ſeveral Arts, are chiefly owing to People of thoſe Characters. There is ſcarce a more powerful Principle in Nature than that of Imitation, which not only leads us to do *what* we ſee others do, but *as* they do it. 'Tis true there are Exceptions from every Rule: there are Heteroclites, Perſons in good meaſure exempted from the Influence of this Principle; and 'tis happy there are; witneſs ſuch as *Paracelſus*, *Hobbes*, *Leibnitz*, &c. In effect, If an Art were firſt broached by an happy Genius, it is afterwards cultivated, on his Principles, to advantage; otherwiſe not: and it may wait long for the anomalous Hand of ſome Reformer, to ſet it to rights. Some of our Arts have met with ſuch Hands, others ſtill want 'em.

WERE we, now, to give an abſolute and conſiſtent Definition of a *Dictionary*; we ſhould ſay, "It is a "Collection of Definitions of the Words of a Language."-----Whence, according to the different kinds of Words and Definitions above laid down, *i. e.* according to the different Matter, and the different View wherein ſuch Matter is conſidered, will ariſe different ſorts of Dictionaries: *Grammatical*, as the common Dictionaries of Languages, which for one Word ſubſtitute another of equal import, but more obvious ſenſe: *Philoſophical*, which give the general Force or Effect of the Words, or what is common to 'em in all the Occaſions where they occur: and *Technical*, which give the particular Senſe attach'd to 'em in ſome one or more Arts.

BUT, in truth, this is a little chimerical; and is to forget what has been already ſaid. Tho we have *Dictionaries* under all theſe Titles; it would perhaps be hard to find any conformable to this Partition; which is not ſo much taken from what really is, as what might, or ſhould be. Dictionariſts are far from conſidering their Subject ſo cloſely, or confining themſelves to ſo narrow, tho direct, a Channel: They muſt have more room; and think themſelves privileg'd by the general Quality of Lexicographers, to uſe all kinds of Definitions promiſcuouſly. 'Tis no wonder they ſhould not keep to Views which they had not, and which could only ariſe from Reſearches they never made. While the Notions of *Term* and *Art*, remain'd yet in the Rubbiſh they were left by the Schoolmen; thoſe of *Definition* and *Dictionary* muſt needs be vague and arbitrary enough; and the Dictionariſts and Expoſitors, profited by an Embarraſs it was their Buſineſs to have remov'd. They have not only built on it, but improv'd it, by a continual varying and confounding of Views, imperfect Enumerations, *&c.*

'TIS not to be imagin'd, the Miſchiefs, and Inconveniences that have aroſe from this ſingle Head; the great Uncertainty it has introduc'd into Language; and the Obſtacle it has been to the Improvement thereof. 'Tis certain it has, in great meaſure, defeated the Intention of Speech; and turn'd Knowledge which that was to be the Medium of, into Jargon and Controverſy. All the Confuſion of *Babel* is brought upon us hereby; and People of the ſame Country, nay the ſame Profeſſion, no longer underſtand one another.----The Effect is, that our Knowledge is grown into little other, than that of Peoples Miſunderſtandings or Miſapprehenſions of one another; which is the only kind of Knowledge that grows; and which will for ever grow: there being the Seeds already laid of ſuch Diſputes, as, according to the ordinary ſpreading of ſuch things, muſt overſhadow, and ſtarve every thing elſe. If all Men meant preciſely the ſame thing by the ſame Name; there would be no room for their differing, upon any Point, either in Philoſophy or any thing elſe: There is no more poſſibility of ſeeing the Relations of Things to each other, differently; than of altering their Nature, and overturning the Syſtem. Relations of Ideas are as immutable as the Creator's Will.-----Error, in effect, is no natural Production; nor is there any direct way of coming at it: We muſt go about for it; and find ſome Law of Nature, to put it in our Power. So that Error is in one ſenſe Truth ere it takes place; only 'tis not the Truth it is taken for.

THE Weakneſs of our Reaſon, which we complain ſo much of, is in great meaſure idle; the Fault is foreign, and lies wholly in the Confuſion of Language; which would not only puzzle us, but the very Angels in Heaven, to make any thing of: Witneſs abundance of our Explications of *Trinity*, *Hypoſtaſis*, *Subſtance*, *Accident*, *Faculty*, *Liberty*, *Cauſe*, *Nature*, *Attraction*, &c. which Divines and Philoſophers fatigue themſelves ſo much about. I am confident, that were the Almighty to inſpire us with a new Language, agreeable to Things themſelves; it would amount to a Revelation; and all our Duties, and Relations would be viſible therein.----The Diſeaſe, in effect, has ſpread ſo far, that there is little hopes of ſeeing it remov'd, or even alleviated, without a new Language, formed *ex poſt facto*, from what we now perceive.-----But ſomething of this will come under Conſideration hereafter; in the mean time we venture to pronounce, that "The Reforma-" tion of Science, amounts to little more than the Reformation of Language."

THERE are two Manners of writing: In the one, which we may call *Scientifical*, we proceed from Ideas and Things, to Words; that is, firſt lay down the Thing, then the Name it is called by.-----This is the way of Diſcovery, or Invention; for that the Thing ought to be firſt found before it be named. In this way, we come from Ignorance to Knowledge; from ſimple and common Ideas, to complex ones.

THE other, *Didactic*, juſt the Converſe of the former; in which we go from Words, and Sounds, to Ideas, and Things; that is, begin with the Term, end with the Explanation.----This is the hiſtorical Way, or the way of Teaching and Narration; of reſolving the extraordinary Knowledge of one Perſon, into the ordinary of another; of diſtributing artificial Complications, into their ſimple Ideas: and thus razing and levelling again what Art had erected.

THE *Dictionary* comes under the latter Kind. It ſuppoſes the Advances and Diſcoveries made, and comes to explain or relate 'em. The Dictionariſt, like an Hiſtorian, comes after the Affair; and gives a Deſcription of what paſs'd. The ſeveral *Terms*, are ſo many Subjects, ſuppoſed to be known to him; and which he imparts to others, by a Detail of the Particulars thereof.----Indeed, the Analogy between a *Dictionary* and a *Hiſtory*, is cloſer than People at firſt ſight may imagine: The Dictionariſt relates what has paſs'd with regard to each of our Ideas, in the Coalitions, or Combinations that have been made thereof: His Buſineſs is to deliver the Progreſſes made in the ſeveral Parts of Knowledge under his Conſideration, by an orderly Retroſpect and Deduction of the Terms, from their preſent complex, to their original ſimple State. The Dictionary of an Art, is the proper Hiſtory of ſuch Art: The Dictionary of a Language, the Hiſtory of that Language. The one relates that ſuch an Art, or ſuch and ſuch Parts thereof, ſtand ſo and ſo; are managed ſo and ſo; and the reſult ſo and ſo: The other, that ſuch and ſuch a Word is uſed as ſynonymous to ſuch and ſuch others. The Dictionariſt is not ſuppoſed to have any hand in the Things he relates; he is no more concerned to make the Improvements, or eſtabliſh the Significations, than the Hiſtorian to atchieve the Tranſactions he relates.

THE difference between what we commonly call the *Hiſtory* of an Art, and a *Dictionary* thereof, is only circumſtantial; ariſing from the different Views of the two Authors: The one chiefly regards the Time and Order *when* each Step, each Advance, was firſt made, *i. e.* how it ſtood with reſpect to ſuch and ſuch Æras, or Periods of Time; and might more properly be called the *Chronology* of the Art: the other regarding chiefly the Object or Intention of the Art, relates its preſent Conſtitution, and *how* it proceeds to attain the End propoſed. You may add, that the former primarily conſiders what is paſt, or already advanced; the other alſo what is preſent, or remains to be done: The one tells, *e. g.* how *Mercury* finding a dead Tortoiſe on the Shore, took its Shell, added Strings to it, and made it into a Lyre: The other, how a Lyre is, or may be made. And if you will likewiſe add this, that the Hiſtory intermixes divers foreign, and accidental Circumſtances with the Diſcovery; which the Dictionary abſtracts and ſets aſide, and ſo reduces it nearer to Science: you will have the full and adequate Difference between 'em. Thus the making of the firſt Lyre is related with ſome Circumſtances which have no place in the proper Structure of the Inſtrument, and are therefore to be omitted in the Dictionary, which only takes in what belongs to the Art, or Artiſts in general; not what belongs to ſome one of 'em.

THE whole, in effect, amounts to this, that the firſt time of doing a thing, is related by the Hiſtorian with the ſeveral Particulars which in any wiſe, tho occaſionally only and remotely, affected it: Whereas the Dictionariſt, coming afterward, keeps more cloſely and ſeverely to the Point, and relates nothing but what is eſſential; that is, the firſt time, the thing is conſider'd as now ariſing; a new Production or Phænomenon, from ſome analogous Principle; and therefore we attend to the foreign Cauſes that brought it forth: whereas afterwards, we conſider it as ariſing from the pre-exiſting Theory, or Preſcriptions of Artiſts, and thus reſolve the Cauſe into the Art it ſelf.

ANY other difference which there may ſeem to be between the two; is only as to more or leſs particular; which, indeed, is a thing that embarraſſes and amuſes us on many other occaſions: Thus in mere civil Hiſtories, if one relates the Series of a Campaign, another the Bombardment of a Town, and a third the Wounding and Death of a general Officer; tho the two latter Subjects be only Parts of the former, yet the firſt will be ſaid to have compoſed a Piece of *Hiſtory*, the ſecond a Piece of *Fortification*, and the third a Piece of *Chirurgery*. And yet there is no other difference between them, than between the Geography of a Country, and the Topography of a Village, or a Hillock; the Hiſtory of a Nation, and the Biography of a ſingle Perſon.

TO ſay no more, the Dictionary of an Art ſtands in much the ſame Relation to the Hiſtory thereof; that the Hiſtory of a People, does to the Lives of all the conſiderable and active Perſons therein. Their difference is only as to the Point of Sight; the Eye being ſuppoſed ſo near in the one Caſe, as to ſee the Parts diſtinctly, and in the other ſo far off, as to take in the Whole completely: whence the one gives you all the Incidents; the other only the greater. In effect, the one is all concerted to one point of view, moſt favourable to the Whole, and the great Parts; the other to many; the Eye being ſhifted for each Part, to furniſh an adequate Repreſentation thereof. In the one Caſe, it is ſuppoſed within the Work; ſo as only to ſee thoſe Parts next it, which neceſſarily hide the reſt; in the other, 'tis without, and can only take cogniſance of thoſe which lie outwards: So that the one chiefly diſcovers how things ſtand within; the other how they ſtand with regard to the adjacent ones.

I AM afraid to keep the Reader any longer in this painful way of Diſquiſition, wherein we are obliged to dig for every ſtep we take. It would doubtleſs ſeem a more agreeable, as well as more reputable Employment, to be raiſing things on high; than thus engaged in ſinking, and working under ground: A Caſtle in the Air is an Object of Pleaſure to every body, while it laſts; and withal is eaſily rais'd, and at ſmall Expences. Your Mines and ſubterranean Matters are mere drudgery, and Pioneers work; difficult to carry on, dubious of Succeſs, and overlook'd when done. Being therefore arrived near the Surface, we take this Opportunity to quit the Courſe, and emerge to open Air.

AFTER ſo ſevere an Inquiry into the Reaſon, Nature, and Perfections of a *Dictionary*; it may prove dangerous and impolitick to ſpeak any thing about the preſent one. From the Deſign of a Dictionary in general, to the actual Performance of any particular one, the Language muſt be much altered. A Man would make fine work

work, that ſhould examine the ſeveral Dictionaries extant, by the Standard here laid down: None of them could abide ſuch a Trial; even that here offered muſt go to wrack, like the reſt.——It may be remember'd, that the Thing executed is allowed to come ſhort of the Idea conceived: The former is only a Copy of the latter, and liable to all the Imperfections incident to other Copies. A thouſand things interfere: Lexicography, being of the Nature of an Art, deviates of courſe from what pure Reaſon would preſcribe; and its Productions come to degenerate ſtill farther, by the Accidents that attend their bringing forth. The Tools, the Materials, and forty things come into the Account: the former prove out of order; the latter obſtinate, and untractable, or perhaps not eaſy to be had. In effect, the Author's Situation, his want of Leiſure or Perſeverance, his Frailties and Foibles, nay his very Perfections and all, conſpire againſt it.

INDEED, a too ſervile Attachment to the Rules and Methods of an Art, in many Caſes proves incommodious and impertinent. We know that the Rules of an Art are poſterior to the Art it ſelf; and were taken from it or adjuſted to it, after the thing it ſelf was done. An Author, therefore, is ſtill in ſome meaſure left to his own Conduct, and may conſider himſelf as inveſted with a ſort of diſcretionary Power, whereby he can diſpenſe with ſome of 'em, and go by others of his own ſuggeſting, where he apprehends it for the general advantage of the Work. The Heights of Art are never to be reach'd by the Rules, but by Genius; by reaſon the Rules were accommodated to a certain Concourſe of Circumſtances, which rarely happens twice; ſo that Laws ſhould be made *de novo* for every new Caſe, or Condition of things. While a Perſon conſiders himſelf as following at ſecond hand, the Meaſures pointed out or preſcribed by others; he will not go on with that Spirit and Alacrity, as when he follows his own Bent. He ſhould therefore conſider himſelf in the Place of the firſt Inventor, or as his Repreſentative, or Succeſſor; and therefore qualified to enact with the ſame Authority for the preſent occaſion, as he did for another.

WHEN a Law is not founded on mere Reaſon, as we have ſhewn is the Caſe in Art; the Obſervation of ſuch Law cannot be enjoined on others. It may well obtain with reſpect to the Perſon that firſt eſtabliſh'd it, as being agreeable to his perſonal Reaſon, *i. e.* accommodated to his particular Combination of Genius, Situation, and other Circumſtances; but can't extend to thoſe in whom this Combination is different. Accordingly, few Laws of Art are univerſal. Small matter by what Laws and Preſcripts a People is guided, provided they be led on to Happineſs; or by what Courſe a Veſſel ſteers, if ſhe do but make a proſperous Voyage.

WITH this View, in the preſent Work, we have taken all the Advantages the nature of the Thing would afford us; and have frequently made our ſelves Delinquents againſt ſtrict Rule, for our Reader's good.----A Dictionary, by our own Confeſſion, is to be a Hiſtory; and yet we have not kept ſo cloſe to that Form, as to abandon the Benefit of all others. In the buſineſs of Mathematicks, for inſtance, the regular way is to relate, or enumerate the ſeveral Matters belonging thereto, without inveſtigating or demonſtrating their truth: Demonſtrations, ſtrictly ſpeaking, have nothing to do in a Dictionary, no more than anthentick Inſtruments, Declarations, *&c.* in a Hiſtory. To pretend to demonſtrate the ſeveral Properties and Relations, *e. g.* of *Lines*, *Angles*, *Numbers*, &c. in a Dictionary, were an Indiſcretion as great, as for an Hiſtorian to produce Certificates, and Copies of Pariſh Regiſters, of the *Births*, *Burials*, *Marriages*, &c. of the ſeveral Perſons whoſe Actions he relates.----And yet, on ſome extraordinary Occaſions, we have not forbore to give Demonſtrations; where, for inſtance, there was any thing very intereſting, or important in 'em: A Practice which Hiſtorians themſelves frequently give into; tho it be a confeſſed Irregularity, as it breaks in upon the Unity of the Narration, and accordingly gives their Work the Denomination of *Mix'd Hiſtory*.

BUT we are far from the Views of ſome Dictionariſts, who think it incumbent on 'em to demonſtrate every thing that is capable thereof. This is directly to forget their Quality; to corrupt the Integrity of the Work *mal à propos*; 'tis being licentious, and impertinent at the ſame time, and diſpenſing with the Rules to their own coſt. How dear, *e. g.* muſt a competent Demonſtration of moſt of *Euclid*'s Propoſitions be here purchaſed? Either the Reader muſt be at the Pains of picking it piecemeal from out of twenty ſeveral parts of the Book, where the Alphabet has happen'd to caſt it; or the Author muſt relinquiſh the Advantages of a Dictionary, and deliver things together, that properly belong to ſo many ſeveral places; or there muſt be a Repetition of the ſame thing a dozen times over. And for what? why, to make the *Dictionary* do the Buſineſs of an *Euclid*'s *Elements*; which it is the unfitteſt in the World for. You might with equal propriety make an ozier Baſket ſupply the Office of a Pleaſure-Boat; or a Sword-pummel that of a Portmanteau, as *Paracelſus* is ſaid to have done.

WHEN a thing has been once regularly demonſtrated, it may be aſſumed, or taken for granted: every body perhaps may be concerned in the Truth of it, but not to ſee the Truth of it. To make it a Principle to take nothing upon truſt, would be as troubleſome in the Sciences, as in Life; and we muſt remain for ever, both wretched, and ignorant. Not only Suppoſitions, but even Errors, frequently lead us to Knowledge otherwiſe inacceſſible. Mathematicians themſelves, who of all others keep moſt to Demonſtration, yet find themſelves under a frequent Neceſſity of admitting and making uſe of things as true, which they do not ſee to be ſo; and thus are ſway'd, like other People, by Authority. A Perſon who makes uſe of the Equality of the Square of the Hypothenuſe, to the Squares of the two Sides; upon the Credit of *Pythagoras*, or *Euclid*'s having demonſtrated it; does little more than what they themſelves do on many Occaſions, who aſſume and make uſe of Propoſitions they have no other evidence of, but the knowledge or remembrance of their having been demonſtrated.

THE Caſe is much the ſame with *experimenting*; which ſtands on the like footing as demonſtrating. They are both neceſſary in their kind; the latter, as it leads on our Knowledge, the former as it follows, and ſecures the Rear: But their uſe is to be reſtrained to theſe Purpoſes; and may be diſpens'd withal in Caſes where neither of theſe are concerned. A Perſon who would diſcover any Point in Phyſicks, or broach and eſtabliſh any Point in Mathematicks, muſt uſe 'em: But the Occaſion is in great meaſure private, and perſonal; and does not extend to the Publick in the ſame degree as the Knowledge of the Doctrines themſelves. That is, the particular means by which a thing was firſt come at, or is ſhewn to be true, do not intereſt us ſo immediately as the Knowledge of the thing it ſelf, which might have aroſe from various other means, and in other manners: A Man may know a thing in the way of *Preſumption*, of *Opinion*, of *Surmiſe*, of *Authority*, and forty other ways; which, tho all much inferior and leſs excellent than the way of *Demonſtration*, and *Certainty*; yet we are glad of 'em on many occaſions, and uſe 'em to good purpoſe. Every degree of Knowledge is valuable. It would be an unreaſonable, as well as an incommodious Sullenneſs in us, to refuſe all Light, except that of Noon-day. We find our Eaſe and Happineſs frequently depend on the doing of things by Twilight, or even Moon-light, or the ſtill more dubious Light of, perhaps, a Ruſh or a Glow-worm.

PYTHAGORAS, in all probability, was not ignorant of the Equality of the Square of the Hypothenuſe, *&c.* before he demonſtrated it; elſe, what ſhould have led him to look for the Demonſtration? And the like may be ſaid of many of Mr. *Boyle*'s Experiments. *Plato* even obſerves, that "the very putting a Queſ-"tion, implies ſome Knowledge of the thing demanded; ſince without this we ſhould not know that what is "returned is an Anſwer."

LESS

LESS might have ſufficed, to ſhew why in the Courſe of this Work we have uſually omitted the Apparatus of Demonſtrations, and Experiments; and given the Doctrines pure and uncumbred by any thing not eſſential to 'em. The Experiments, for inſtance, which led to the Theory of Light, and Colours, what would they be, but like the Scaffolding before a fine Building, which break and interrupt the Sight, and hide moſt of the Beauties of the Work? Such Scaffolding, 'tis true, would be of uſe to the Connoiſſeurs; who might have a mind to examine the Work, to meaſure the Proportions of the ſeveral Parts, and inquire whether every Stone were juſtly laid. But to the generality it would rather be an Incumbrance, much to the diſadvantage of the Work.—— Yet, in the Caſe of Experiments, as of Demonſtrations, we have receded a little from ſtrict Method, in favour of ſuch as have any thing very remarkable or beautiful in 'em. For the reſt, the Reader, if his Curioſity ſerve him, is told where to have 'em at firſt hand.

IN the Caſe of Definitions, too, we do not keep inviolably to what has been above laid down; but reſerve to our ſelves the diſcretionary Right above ſpecified.——We make uſe occaſionally of all ſorts of Definitions, as they beſt ſuit our Deſign, the conveying of Knowledge. In effect, we have uſually a Regard to the degree of notoriety, importance, *&c.* of the Term, tho a Point arbitrary, and indefinite enough; and endeavour to accommodate the Explication thereto. 'Tis a Rule with us, to ſay, *Communia proprie, propria communiter*; to expreſs common Things ſo as that even the Learned may be the better for 'em; and the more abſtract and difficult, ſo as even the Ignorant may enter into 'em. Accordingly, in popular Terms we endeavour to give a technical Definition, *i. e.* to wave the general and obvious Meaning, which is ſuppoſed to be known; and enter farther into the nature of the Thing, not known: As in defining of *Milk*, &c. But in the more remote Terms, the popular and nominal Definition is alſo given, as being ſuppoſed to be here wanted.

THE literal and technical Definitions of a Term, are lame and imperfect without each other; the firſt gives its Uſe and Effect, as part of general or abſtracted Science; the ſecond, as applied to ſome particular Subject. ——The literal Notion, *e. g.* of *Relation*, is that of "conformity, dependence, or compariſon of one thing to "another:" Thus much is common to *Relation*, both in Grammar, Logick, Geometry, *&c. i. e.* it expreſſes this, both when applied to *Words*, to *Propoſitions*, to *Quantities*, &c.——The technical Notion of Relation in Grammar, is "the dependence of Words in Conſtruction:" This makes the grammatical Notion of Relation, *i. e.* it limits or ties down the general abſtract Idea of *Relation*, to the particular Subject of Grammar, Words. Again, the technical Notion of *Relation*, with regard to Arithmetick, Geometry, *&c.* is "the conformity, or "dependence between two or more Lines or Numbers;" *i. e.* the Mathematicians adopting the Word into their Art, reſtrain its literal or general Meaning, to ſome particular Purpoſes of their own, *i. e.* to Quantities.

FROM the whole, it follows, that the two Kinds of Definitions differ as an Art and a Science; as general and particular Reaſon; and again, as abſtract, and concrete. And hence, from the ſeveral technical or particular Meanings, one might of themſelves run back to the general, or literal Meaning, by abſtracting; but not contrariwiſe, from the general or abſtract to the particular ones; in regard thoſe other are arbitrary, and depend on the good pleaſure of the Artiſt who firſt introduc'd them.

ACCORDING to ſtrictneſs, every Term ſhould be firſt given in its literal, or grammatical Meaning; eſpecially when the ſame is a Term in ſeveral Arts; as this helps to fill up the Series, and ſhew the orderly Derivation of the Word, *à primis naturalibus*, from the firſt ſimple Ideas that gave riſe to it, to its laſt, and utmoſt Compoſition. This is like giving the *Root* of the Family; which is certainly neceſſary to its Genealogy.—Yet we have not always kept to this Method. In ſome Words, there is a deal of the literal import of the Word preſerv'd in the Term or the technical one; as in the word *Free*, or *Freedom:* A Man who has a Notion of *Freedom* in its common or literal Senſe, will eaſily paſs on to all the particular ones, as *Free City*, *Free Port*, *Freedom of Speech*, *of Behaviour*, &c. So that in this Caſe, a literal Definition might almoſt alone ſuffice; the Word having ſuffer'd very little at the hands of Artiſts.——In other Words, the literal or primary import of the Word, is almoſt loſt in the Term: for inſtance, in the Term *Power*, in Arithmetick; which will ſcarce bear any tolerable Definition at all. Literally, the Word implies a Relation of Superiority or Aſcendency over ſomething, which in reſpect hereof is conceiv'd as weak, *&c.* According to the analogy of Language, therefore, the Arithmetical Power ſhould have ſomewhat of this relation of ſuperiority over the Root: But the Root it ſelf is alſo a *Power:* So that the Definition of Power muſt take in two oppoſite Relations, *viz.* Power and Subjection.

PERHAPS, to go in the moſt regular manner, and take up things from their Source; one ſhould begin with ſettling their Etymologies: but the great alterations Words undergo, and the great length they are run from their original Meanings, in being borrowed from one Language or Age to another, would frequently make this not only a tedious, but an uſeleſs Labour: ſo that here, too, we have uſed a diſcretionary Power, and only meddled with Etymologies where they appear'd of any ſignificance.

TO explain a Term as a Term, we uſually expreſs the Circumſtances wherewith it is attended in the Art to which it belongs, in their artful Names. This is agreeable to the manner of Artiſts, who writing of their reſpective Arts, uſe Terms as common Words, and ſuppoſe 'em to be known: and 'tis this that conſtitutes a technical Explanation; not the giving the general Effect or Force, in ſuch Words as may equally agree to all other Arts.——And yet in ſome Caſes we recede from this Rule, particularly in divers of the lower Claſs of Manual Arts, and the Structure of ſome Machines: Thus, *e. g.* in Turnery, we make no difficulty, for inſtance, inſtead of *Chuck*, to ſay a round piece of Wood, *&c.* The reaſon is, that where the ſeveral ſubordinate Terms of a Definition are themſelves explain'd in their places, we may ſuppoſe 'em underſtood; but where the Term defined is it ſelf ſo low, that we do not go lower to define the Parts couched under it; there we chuſe, as more ſcientifical, to ſubſtitute ſome more obvious Name, or the general Meaning of the Word for the Term it ſelf; and thus prefer the general or popular, to the technical Definition.

FOR it is to be obſerved, that the Dictionary has its Limits; it only carries Matters ſo low; to a certain pitch of Simplicity, where we ſuppoſe People may take 'em up, and carry 'em farther as they pleaſe. We bring 'em into their Sphere, and ſo leave 'em. So much Knowledge, *i. e.* ſuch a number of complex Ideas, as we may preſume 'em uſually to have got in the common Occurrences of Life, we are willing to ſuppoſe, as a Footing: where theſe end, our Dictionary is to begin, which is to take in the reſt.

IF at any time we explain a complex Idea, which it may be ſuppoſed moſt People have form'd; 'tis becauſe we think they don't take in all the ſimple Ideas that go to conſtitute it: as in the Caſe of *Milk*, *Blood*, or the like; where People are contented with two or three of the more obvious Properties and Phænomena, and ſlur over the reſt.——Thus in Milk, *Whiteneſs* and *Fluidity* are almoſt alone conſidered; and theſe, in the common Opinion, conſtitute *Milk*; ſo that whatever has theſe two Attributes, comes in for the denomination *Milky*. The Texture and component Parts of this Milk, the manner of that Fluid's being ſecreted, collected, *&c.* with the peculiar Properties, and Virtues reſulting from all theſe are left behind. So in Blood, 'tis enough it be *a reddiſh, pretty compact, animal Juice, when warm fluid and homogeneous*, &c. This is going a great way, and even the Dictionaries ſeldom go farther: But, for the component Parts, the *Cruor* and *Serum*; with the component Principles of theſe, *viz.* the *Oil*, *Phlegm*, &c. their Form, Properties, *&c.*

whence ariſe the Craſis, Colour, Heat, Specific Gravity, *&c.* of Blood; Writers don't ordinarily trouble themſelves.

IF, by the Artifice abovementioned, we get free of a vaſt load of plebeian Words, which muſt have greatly incumber'd us; the Grammar and Analogy of Language diſengages us from a ſtill greater number of all kinds. The various States of the ſame Word, conſider'd as it comes under different Parts of Speech, and accordingly aſſumes different Terminations, increaſes the Liſt of Terms immenſely: as, in *Dark*, *Darkneſs*, *Darkning*; *Project*, *Projection*, *Projectile*, *Projective*, &c. which may either be conſider'd as one and the ſame Word under different Habitudes; in regard there is a common Subſtratum of them all: or, as ſo many different Terms; in regard every one takes in ſomething not contained in the other.------This Latitude we make uſe of occaſionally; and either conſider the Words this way or that, as ſeems moſt advantageous to our purpoſe. In ſome Caſes, where the Alteration is merely grammatical, we content our ſelves to explain 'em in one ſtate, *e. g. Shearing*; and ſuppoſe the Reader able, by Grammar to form the reſt, as *Shorn*, &c. In others, where ſeveral particular Ideas are arbitrarily ſuperadded to the Word in one Part of Speech, which do not belong to it in another, we there explain it in all: as, *Precipitate*, *Precipitant*, *Precipitation*, &c.

THIS gives an occaſion to mention a ſtrange kind of Licenſe frequently practis'd in our Language. Tho there be ordinarily a great deal of difference between the ſeveral States or Modifications of the ſame Word, *e. g. Reflecting*, *Reflexion*, *Reflexible*, &c. the ſame as between the Action and Quality, the Power and the Exerciſe of it in this or that Caſe, the Cauſe and the Effect; yet Authors make no difficulty of uſing 'em promiſcuouſly: which would make downright Nonſenſe, were the Readers to keep to the ſtrict import of the Words. But the Truth is, we are not ſo critical about the Matter; if the Meaning come within our reach we jump at it, and are glad to take it; without waiting to ſee whether it would reach us in its preſent Direction, or whether it might not rather fall ſhort, or fly by us. What Confuſion ſhould we make, even in our beſt and cleareſt Writers, were we reſolved not to underſtand 'em but according to the ſtrict Rules of Grammar, and not indulge 'em the petty liberty of uſing *quid pro quo*, one part of Speech for another? In a thouſand Caſes, the ſame Idea is denoted by oppoſite Terms: Thus, we ſay, ſuch a Medicine is good *for*, or *againſt* the Worms, Plague, *&c.*

IT may be urged, that as Cuſtom has authoriz'd this latitudinarian Practice, it is become of grammatical Authority; and that as the Licenſe is known, it can't deceive us; ſince the Readers are led on ſuch occaſions to relax the Bands of Grammar, and annul the difference between the Parts of Speech, in order to admit one a ſubſtitute for another.——But I am afraid this expedient ſcarce indemnifies us from the Abuſe. Beſides the extraordinary embarraſs of reading what is thus promiſcuouſly wrote, 'tis not always we know when and how to ſuperſede the ſtrict import of an Author's Words, and make him ſpeak Senſe in his own deſpite. This I take to be none of the leaſt occaſions of Controverſy and Diſpute owing to Language, and which we may almoſt deſpair of ſeeing rectified, unleſs in a new one.

I SHALL not here enter upon the Merits and Defects of the *Engliſh Tongue*, conſidered as a Language: A great deal has been ſaid on that Head by others, for which the Reader may turn to the proper Article in the Dictionary it ſelf. This Place we reſerve, not for other Peoples Notions, but our own; and what we have to add, will be chiefly as it ſtands with regard to *Art*, and more particularly to a *Dictionary of Arts*.

I BELIEVE none will queſtion but we met with Difficulties enough in the Courſe of this Work. The very Bulk and Dimenſions of it confeſs as much, and the Variety and Uncertainty of its Matter ſtill more. But theſe were in ſome ſort natural Difficulties, and ought to be conſider'd as neceſſarily appendent to the very Eſſence of the Deſign; and therefore did not afflict us ſo much as thoſe that roſe from it at ſecond hand, or were ſuperadded to it, as it were, by Accident. And ſuch was the preſent wild State of our Language, which alone were ſufficient to have baffled the beſt Scheme, and broke thro' the beſt Meaſures that could be form'd.

WE have already repreſented *Language* as ſomething very important; and as having a near and neceſſary intereſt in Knowledge. *Names*, we here add, are ſolemn things, as they are Repreſentatives of Ideas themſelves, and uſed on moſt occaſions in their ſtead: and *Terms*, or Combinations of Ideas, are ſtill more ſo; as much as complex Engines, are of farther and nicer Conſideration than the ſimple mechanic Powers. But who would imagine this, to conſider the wanton uſe we make of 'em; and with how little Fear, or Diſcretion, Words are treated among us? Every body think themſelves privileg'd to alter, or ſet aſide the old, and introduce new ones at pleaſure. *England* is open to all Nations, at leaſt in this reſpect; and our Traders in this Commodity, import their Wares from every Country in all ſecurity. The mercantile Humour ſeems to have poſſeſſed every Part of us, ſo that we are not only unwilling to be without the natural Produce of our Neighbours Countries, but we even envy 'em their Faſhions, their Follies, and their Words. Scarce a petty Author that appears, but makes his Innovations: But when a Dictionary comes out, 'tis like an *Eaſt India* Fleet, and you are ſure of a huge Cargo. The Effect is, that our Language is, and will continue in a perpetual flux; and no body knows whether he is maſter of it or no. The utmoſt he can ſay, is, that he had it for ſuch a Day, excluſive of what has happen'd ſince.

A MAN never knows when he is at the end of the Terms, *e. g.* in Architecture. When he has got two or three Names, for ſome one Member, and thinks himſelf overſtock'd, 'tis odds he has not half. 'Tis not enough he knows what it is named in the *Engliſh*; but he muſt likewiſe learn what the *French*, *Italians*, *Latins*, and *Greeks*, likewiſe call it, or frequently find himſelf at a ſtand. Thus it is in the Caſe of *Fillets*, *Liſts*, *Liſtels*, *Reglets*, *Platbands*, *Bandeletts*, *Tænias*, and *Baguettes*; of *Chaplets*, *Aſtragals*, *Batoons*, and *Tores*; of *Gulas*, *Gueules*, *Doucines*, *Cimas*, *Cymatiums*, *Ogees*, and *Talons*; *Ovums*, *Ovolos*, *Echinus's*, *Quarter-rounds*, *Boultins*, &c. between which, there is no known, allowed differences; but they are either uſed indiſcriminately, or diſtinguiſh'd arbitrarily; one Perſon making this diſtinction, and the next another, or perhaps none at all. So that if we come ſtrictly to Dictionaries, we ſhould have a different one for every Author.

BUT the Miſchief does not end here: for as the antient Arts are in many reſpects different from the modern; the uſe of their Terms neceſſarily involves us in a new Confuſion, and makes the ſame Word ſtand in an ancient Author for one thing, and in a modern for another. Thus it is in *Paraſtata*, *Orthoſtata*, *Anta*, &c. In effect, there is that Alteration continually making in the Language of Architecture, that there ought, in Propriety, to be a different Dictionary of it for every different Age.

THE Truth is, a fourth part of the Words in ſome of our popular Dictionaries, ſtand on no better Authority, than the ſingle Practice of ſome one fanciful Author; who having an intemperate Deſire to ſhew either his Learning or Breeding, has met with Dictionary-Writers fond enough to take his Fripperies off his hands, and expoſe 'em to the Publick for legitimate Goods. By ſuch means, theſe Exotics have obtain'd a kind of Currency; ſo that a Dictionary would be thought defective without 'em. To omit even our Fopperies would be thought a Failing; and might even be eſteemed by many as the moſt unpardonable of all.——On theſe accounts we have been oblig'd to temporiſe a little, how much ſoever againſt our Will; and thus perhaps have contributed

contributed to the ſtill farther Eſtabliſhment of a number of Words, which we had much rather have ſeen proſcribed, or baniſh'd the Land.

UPON the whole, nothing could be more deſirable than an *Index expurgatorius*, to clear the Language of our ſuperfluous Words, and Equivocals; all the modern *French* and *Italian* Terms in the ſeveral Arts, where we have *Latin* and *Greek* ones; and even all the *Latin* and *Greek* ones, where we have *Engliſh* or *Saxon* ones, equal in Sound and Significancy. I think the learned Languages ought to have the preference to the modern, becauſe every Perſon may be ſuppoſed to have read, but not to have travelled; and our Country Words I would prefer to any others, becauſe there is the moſt analogy between 'em, and they uſually retain more of the Origin and Etymology than thoſe tranſplanted from other Languages.——Such a Reform would reduce our Dictionaries to more reaſonable Dimenſions; and diſincumber the Arts from half the difficulty now to be ſurmounted in attaining 'em.

BUT, there is another Spring of Words no leſs prolifick than that hitherto ſpoke of, and which has produced a Swarm of ſpurious, miſhapen Words, which no Nation but our own would ever have own'd: I mean the Itch of coining or making *Engliſh* Words, by a ſort of analogy, from the *Latin* and *Greek* ones. This Fault the Tribe of Lexicographers have carried to a ſtrange exceſs. How muſt a Man ſtare, to ſee what deteſtable Stuff ſome late Writers of that Claſs have complimented us with: Words of their own manufacture, ſcarce fit to do any thing with, except cure Agues! Witneſs ſuch as *Scopuloſity*, *Siticulous*, *Scatebroſity*, *Siccific*, *Pugnacity*, *Segnity*, *Sputative*, *Mulieroſity*, *Mugient*, *Gracility*, *Faſtuouſneſs*, *Exuccous*; and many thouſand more, at the Reader's ſervice, to be met withal in a Dictionary which few People are without. One would almoſt wiſh the Mold deſtroyed that ſuch Groteſques were caſt in, for fear of new Impreſſions. We are already overrun with this Author's Scarecrows: but what ſhall we be when, having thus anglicis'd all the *Greek* and *Latin* Words, he proceeds to do the ſame with the *Dutch*, *Iriſh*, *Welſh*, &c. Indeed, I am the leſs angry with him, for that he has carried the Abuſe ſo far, as muſt not only ſave People from being ſeduc'd, but bring the Practice into Contempt. Such Monſters can't poſſibly live long: if they have eſcap'd the Midwife, who ought to have ſtrangled 'em ere they came to light, yet if ever they ſtir abroad they muſt infallibly be knock'd o' the head.

HOW oddly will our Practice in this reſpect look, when confronted with that of our Neighbours? One of the moſt learned Men and greateſt Critics of the laſt Age, M. *Menage*, incurr'd an infinite deal of Cenſure, for only endeavouring to introduce the ſingle word *Proſateur*: and could not ſucceed in it, notwithſtanding that a Word of that import was confeſſedly wanting in the *French*; and both the Sound and Analogy of the new Word were unexceptionable.

TO return. The different ſtate of different Arts is very remarkable. Some of 'em are refined to a degree of ſubtilty that deſtroys 'em; as Metaphyſics, and Logics: others have had no refinement or poliſhing at all, but lie waſte and over-run for want of it; as Agriculture, Heraldry, *&c.* The groſſneſs of ſome is their fault; it being ſuch as diſguſts, and forbids a delicate Mind from purſuing them: in others, their ſubtilty and nicety is their bane, as leaving nothing for a hearty Appetite to feed on. What meagre fare, for inſtance, are the School Rules, and Doctrines of *Mediums*, *Extremes?* &c. They do indeed furniſh us with Relations, and true Relations too; but theſe ſo remote from all Purpoſes of Life, that they are in great meaſure inſignificant.

'TIS certain all our Knowledge and Arts ultimately refer to the great End of Preſervation. The Faculties of the Mind, like thoſe of the Body, were not given us for the mere Exerciſe, or Gratification of 'em; but in ſubſerviency to farther purpoſes. Our Knowledge is all of the Nature of Revelation; and the divine Being reveals nothing to us for the mere vague ſake of our knowing it, but that it may miniſter to his Ends, the being and well-being of his Creatures. Our Perceptions and Notices are all Inſtruments in his hands, which he has appointed to do his work, and bring about the wonderful and adorable Ends of the Creation. They are ſecond Cauſes, or at leaſt Occaſions of what we do; and no doubt are under the Direction of him for whom we do; whoſe Glory is ſerved thereby. Tho they extend to abundance of things, yet they all centre and terminate at laſt in our Preſervation; and accordingly, as they are farther from, or nearer to this Point, they are found fainter or ſtronger: very near they are palpable and cogent; as they recede, they continually abate of their clearneſs, and evidence; and when arrived at a certain diſtance, dwindle to nothing, and are loſt. At a great height from this Centre, the Nexus or Chain whereby things are held together, and in virtue whereof we proceed from things known to things unknown, becomes inſenſible; ſo that we loſe our hold, and wander on we don't know where. Our Faculties here faulter; the Objects they meet with are inadequate to 'em; the Air grows too thin for Reſpiration. But, where we leave off, there poſſibly ſome ſuperior Order of Beings may take it up.-----We have, indeed, a kind of *Comets* in the Affair of Learning, which ſeem to be got far out of the Orb; ſo that one would wonder how they came there, or what ſuſtains 'em; as alſo what they do there. Such are, mere Antiquaries, Etymologiſts, Microſcopiſts, Alchymiſts, Phyſiognomiſts, and other Searchers of Futurity: But theſe, for all their ſeeming diſtance and irregularity, do all reſpect the ſame central Point, and move by the ſame Law with others; and even anſwer very good Purpoſes to the whole.

IN effect, the ſeveral Arts have been cultivated to more or leſs purpoſe, as our Preſervation is more or leſs immediately intereſted in 'em; and by this Key one might almoſt venture to judge which Arts are capable of being carried ſtill farther, and which not.——Our Knowledge of very great and of very little things, is very imperfect, *e. g.* of very great and little Objects, Diſtances, Sounds, *&c.* And the reaſon, no doubt, is, that there is but little Relation between us and them; ſo that we are but little intereſted in the Knowledge of them. Thoſe things we have neceſſarily and immediately to do withal, are made to our reach: for the reſt, no matter, to the Creator's chief Purpoſe, what they are.

AND yet our Leiſure and Curioſity have found means of making even theſe more cognizable than otherwiſe they are: we can, in ſome meaſure, alter the eſtabliſhed Relation between our Faculties and their Objects; and make uſe of one Law of Nature, to undo or ſuperſede another.——Thus we can magnify a little Sound or little Body, or a little Diſtance, *&c.* or we can diminiſh large ones; and thus make things in ſome meaſure adequate Objects, that naturally are not ſo.

BUT there is no great advantage in this: We only, by theſe means, come at a better apprehenſion of things which Nature ſeem'd to put out of our way for no other reaſon but becauſe they did not concern us; leſt we ſhould be engaged to miſtake, and run after things that had no relation to us, to the neglect of thoſe which have.-----Thus, Anatomy is really found of much leſs uſe than at firſt ſight one would imagine; as being employ'd in taking things aſunder and conſidering their Parts, which Nature chiefly intended to be conſidered and dealt with together. There is I know not what ſecret Law, whereby the Effect of a thing is, as it were, attach'd to its integral State; ſo that in proportion as you either diminiſh it, by taking from it, or enlarge it by adding to it, its Effect is alter'd, in a manner beyond what we can well account for from the bare Conſideration of Magnitude.

ABUN-

ABUNDANCE of the leſs uſeful Notices, we find, were kept back, and left to be accidentally turned up in courſe of time: ſuch as the Knowledge of Glaſſes, and their Effects. 'Twas no very important matter whether they were known or not; their uſes were not immediate. If they had, the things themſelves would have been palpable, and neceſſarily diſcovered long ago. Men lived tolerably well without knowing how many Feet a Louſe had, or how many Years a Cannon Ball would be in travelling to the Sun. The *Refrangibility* of the Rays of Light in paſſing different Mediums, which is the great Foundation of all our optic Glaſſes; ſeems only a ſecondary Property or Effect ariſing from another Power, or property of *Attraction* between the Light and the Medium; which it ſelf probably ariſes from ſome other. And there ſeems nothing abſurd in imagining that Nature did not immediately intend ſuch Refrangibility; but that it follow'd accidentally, from ſome Principle which ſhe did intend: So that the great modern Invention of Glaſſes, might be an accidental Derivation, from ſome of Nature's Redundancies. In effect, the only things left to Study and Art, may be theſe very Redundancies; the other Matters, which primarily concern us, being learnt in a more immediate manner.

NO body will take this for a Reflection on Art: 'Tis only a Panegyrick on Nature: an Illuſtration of her Goodneſs in contriving that things moſt neceſſary and uſeful, ſhould be moſt obvious, ſo as to be almoſt diſcoverable by a ſort of Inſtinct; and the other leſs immediately uſeful ones, left to be accidentally turned up in the Courſe of Experiment and Diſquiſition. We may admire her Wiſdom ſtill farther in this, that ſhe ſhou'd as it were go out of her way, and annex a ſort of Pleaſure, beyond her main Purpoſe, to the Knowledge even of things not immediately uſeful; in order to engage us to Induſtry and Activity. This ſhews that ſhe has Ends to ſerve by that very Activity; and perhaps is the beſt Demonſtration in the World of the Neceſſity we are under to purſue Knowledge; and may raiſe a Suſpicion, that this very Purſuit may poſſibly contribute to our Preſervation in ſome farther manner not yet attended to.

'TIS no wonder the School Philoſophy ſhould be carried ſuch a length; conſidering the narrowneſs of its Subject, and the great number of hands to cultivate it for ſo long a time. Its chief Employment is in aſſigning, and enumerating the Characters and Differences of our Perceptions, or internal Objects, taken as they are excited in us in the natural Courſe of things; by which it is diſtinguiſhed from the Modern, which is chiefly imployed in means to vary and modify theſe Perceptions; and thus find out farther Relations and Differences than would otherwiſe have appear'd.——The Philoſophers of the former kind are contented to take Nature as ſhe comes home to 'em; and apply their Reaſonings thereto without more ado: Thoſe of the latter, go out in queſt of her, to have more Matter to reaſon upon. The former are more contemplative, the latter more active; the former, in fine, reaſon, abſtract, and diſcourſe more; the latter obſerve, try, and relate more.

HENCE we diſcover why the Old is much more perfect in its kind than the New. The former has little to do but compare, order, methodize, *&c.* what is ready at hand; the latter has likewiſe to find; after which all the labour of the other ſtill remains. The former takes Nature in all her Simplicity; the latter adds Art to her, and thus brings Nature into conſideration in all her diverſity: the former chiefly conſiders natural Bodies in their integral State; the latter divides, and analyſes 'em: So that the former finds moſt of the principal Relations, the latter many more curious, and amuſing ones. Hence, the former haſtes to its Perfection, and can't long hold out; for that its Matter is limited: the latter can ſcarce ever arrive at it, ſince Experiments are endleſs. To ſay no more, to have Philoſophy in its perfection, we ſhould have the Order, Preciſion, and Diſtinctneſs of the Old; and the Matter, the Copia of the New.

THE modern is yet wild and unaſcertain'd. 'Tis not arrived at the Maturity of Method; the Mine is but juſt open'd, and the Adventurers are yet only ſollicitous about the Matter to ſee what it affords. Circumſtances do not yet come in courſe; and 'twill be long ere it arrive at a juſt extent to give room and leiſure for reducing it to regularity. True, the Rules and Methods of the antient, are in ſome meaſure applicable to the new, and will go a good way towards the ordering and aſcertaining of it; but the preſent Philoſophers ſeem yet too warm and ſanguine for ſuch a Buſineſs; which muſt be left to the ſucceeding Age to think about. Add, that the farther they go on to dig Materials, ſtill the more difficult will the ranging of 'em be; inaſmuch as there is but one true and juſt Order to lay them in; and the more of 'em, the more intricate that Order, and the harder to find. This a Man may be poſitive of, he never will ſee half the Experiments and Obſervations already made, laid up or uſed in a Syſtem of Phyſics.

BUT when that is done, a deal will ſtill remain, ere we have the chief uſes of it. For phyſical Knowledge, ſtrictly conſider'd, is only a Step, a Means of arriving at a higher and farther kind. Hiſtories, Obſervations, and Experiments of the Kinds, Order, Strata, *&c.* for inſtance of Foſſils, are very uſeful and laudable things, as they tend to lay in a Stock of ſenſible Phænomena, for the Mind to work upon, digeſt, and draw new Notices from, for the Improvement of our own Faculties, and the better Conduct of Life: But 'tis a Shortſightedneſs to forget this farther View, and look only to the Things themſelves. The bare Acquiſition of new Ideas is no real advantage, unleſs they be ſuch as have ſome relation to our ſelves, and are in ſome ſenſe adequate, and adapted to the Circumſtances of our Wants, and Occaſions, or capable of being made ſo. Knowledge, in the firſt State, is like Food in the Stomach, which may pleaſe and ſatisfy us, but is of no uſe to the Body till farther prepared. It muſt be brought nearer us, and made more our own, more homogeneous to our ſelves, ere it feeds us.——The modern Philoſophy is not ſo properly a Philoſophy, as the Adit or Opening of one. Its Matter has yet only undergone the firſt Concoction: we are yet only converſant about new phyſical Relations, learnt by Senſation; whereas to bring it to the Perfection requir'd, it muſt have undergone the farther Operations of Imagination, and Reaſon. Mere Phyſics, as ſuch, do not make a Philoſophy; thoſe Phyſics muſt firſt be carried up to Metaphyſics and Ethics, ere we can ſafely ſtop. So far as it is Phyſics, it is foreign to the Mind, and its Occaſions; before it affect and influence our Reaſon and Judgment, it muſt be ſubtiliz'd vaſtly, and made more ſimilar to the Metaphyſical Nature of the Mind. While Phyſics, it remains under the Direction of the Author of Nature; and proceeds wholly by his Laws, and to execute his Purpoſes: ere it come under our Direction, and become ſubſervient to our Will, it muſt have laid aſide what was active, and neceſſary in it, and become paſſive to our Reaſon, *i. e.* it muſt have been tranſfer'd from the Dominion of the Almighty's Will, or Reaſon, and brought under ours; if that do not imply a Contradiction.

TO return. Senſible Phænomena, we have already ſhewn, are the Foundation of Philoſophy: but your Edifice will neither make any Figure, nor afford any Convenience, till you have carried it one or two Stories higher. 'Tis but, as it were, the Cellaring, or Ground-work; which one would think were no very comfortable place to live and ſpend all one's time in. 'Tis one extreme, to take our Lodging as ſome of the modern Virtuoſos are contented to do, under ground; and another to reſide altogether in Garrets, as the Schoolmen may be ſaid to have done.

THE School Philoſophy, however, is of ſome farther uſe, as Matter of Hiſtory: We learn by it how People have thought, what Views have obtain'd, and in what various Manners the ſame thing has been conceiv'd; which, tho it be Knowledge as it were once removed, yet is not intirely uſeleſs. The Hiſtory of human

human Thoughts is no doubt the moſt valuable of all others; it being this alone that can make the Baſis of a juſt Logic, as Phyſiology of a juſt Phyſics. We muſt know wherein People have fail'd, or fallen ſhort, or been deceiv'd, to learn the Reaſons thereof, or be able to form Rules for avoiding the like. The ſeveral Opinions that have obtain'd, may be conſider'd as ſo many Phænomena of the human Mind, which muſt be conſider'd and inquir'd into to find its Nature.——This alone were enough to have engaged us not to omit that part of Learning, in the preſent Work: tho there were not wanting other circumſtantial Reaſons which had alſo their ſhare; as, the neceſſity hereof to the underſtanding not only of the antient Writers, but even of the modern ones, who frequently combat, remark, *&c.* upon the antient Notions. To which it may be added, that abundance of our Terms and Dictions are derived from them, and therefore could not be ſo compleatly underſtood without 'em. The Language of the antient and modern Philoſophy is not very different: the chief Diverſity is in the different Ideas affixed to the ſame Words, and the different Applications of 'em. And happy had it been for the Moderns, had they form'd a new Set of Terms adapted to their new Notions: By adopting the old ones, they have not only introduced a world of Ambiguity and Confuſion; but have even loſt the Credit of many of their own Diſcoveries, which now lie blended and buried among thoſe of the Antients. One is at a loſs to think what could induce the great Philoſopher of our Age, to uſe the word *Attraction*, in the Senſe he has done. No doubt it was originally as pertinent as any other; but the Stamp and Impreſſion it had already taken from the Antients, made it leſs fit to receive a new one. It could at beſt but take it imperfectly; and the reſult was, a promiſcuous Image, wherein we neither ſee the one nor the other, diſtinctly. 'Tis ſcarce in the Power of Imagination, totally to diveſt a Sound of its received Meaning, and conſider it as indifferent to all things; any more than to annihilate the Characters on a piece of Paper, and conſider it as a mere Blank. Accordingly, tho the great Author abovementioned explain'd over and over, in the cleareſt Terms, the Senſe he fixed to his *Attraction*; yet Experience verifies how much he was overſeen; the chief Objections againſt his whole Syſtem being drawn from a Miſapprehenſion of this very Word, which keeps half the Philoſophers in *Europe* ſtill at a diſtance, afraid to admit a moſt excellent Doctrine, merely out of diſtruſt of the Vehicle that conveys it. But this *en paſſant:* The Reader who deſires to ſee farther, may turn to the Articles ATTRACTION, NEWTONIAN PHILOSOPHY, GRAVITATION, *&c.*

WHAT has been ſpoke of the *School Philoſophy*, reminds us of *Aſtrology*; the Terms whereof have not been omitted in this Work.----Were it only that it has once obtain'd, is ſtill extant in Books, and has given occaſion to abundance of Terms and Phraſes, adopted into other Arts; it would have a Title to be remember'd. "The Hiſtory of Mens Follies, *ſays the inimitable* Fontenelle, makes no ſmall part of Learning; and "unhappily for us, much of our Knowledge terminates there *." But this is not all; and they who abſolutely reject all Aſtrology as frivolous, don't know it. Every Art and Science has its Vanities, and Foibles; even Philoſophy, and Theology: and every one its good Senſe, even Aſtrology. The heavenly Bodies have their Influences: The Foundation, therefore, of Aſtrology is good: but thoſe Influences are not directed by the Rules commonly laid down, nor produce the Effects attributed to 'em: ſo that the Superſtructure is falſe. Aſtrology, therefore, ought not to be exploded, but reformed. Indeed a Reformation would reduce it into a little compaſs; but this little is too much to be loſt, as it now is, among that heap of Trumpery mixed with it.------We have even been careful to preſerve what is juſt and rational, in Phyſiognomy, Witchcraft, and many other fanciful Arts. The time was, when Phyſics was not much more worthy the Study of a Man of Senſe, than Aſtrology now is; ſo that one might propoſe an *Introductio ad ſanam Aſtrologiam*, as a Deſideratum.

THE *Preface* is now degenerated into a *Diſſertation* in good earneſt: at leaſt, it has got the Length and Formality thereof, and wants only the Accuracy and Preciſion.-----Enough has been diſcourſed of the general Nature, and Subject of the Work: You muſt now allow me to deſcend a little more to particular, and perſonal Matters; and thus end my Preface, where I might have had Precedents enough for beginning it.

I WILL at leaſt deal honeſtly with my Reader, and not be caught faulty in point of Morality, whatever I may be in any thing elſe.——What has been ſaid hitherto, has been on the advantageous ſide of my Work; and I ſhould not have acquitted my ſelf, ſhould I not likewiſe mention what may be alledg'd on the contrary Part.——The curious Reader, then, may expect, he will here meet with Omiſſions, and there with Redundancies: here the Method and Œconomy are not kept to; there an Article is imperfectly treated: here, a Paſſage from ſome other Language is not ſufficiently naturalized; there a Sentiment of ſome other Author is not ſufficiently digeſted: There, in fine, the Author was aſleep, and here the Printer.

ONE might palliate theſe Objections, by alledging, that "they are things not peculiar to this Work, but "extend to all of the Kind; that moſt of 'em are things not foreign and acccidental to it, but ariſe of neceſ-"ſity, from the very Nature and form of a Dictionary; and that many of 'em, are not peculiar even to a "Dictionary, but agree to all extenſive Undertakings, and are appendant to the very beſt Part of the Deſign, "its Univerſality:" but inſtead of extenuating, I had rather be guilty of inflaming, and aggravating 'em.

FOR *Errors*, they cannot be very few, conſidering the Hands thro' which moſt Parts of our Knowledge have paſſed, and from whom we are obliged to take our Accounts. What one Author, upon the moſt particular Subject, will you produce, that has not his ſhare of 'em? and what *Argus* could poſſibly ſee, and correct the Errors in all the Authors he had to do with? *Scaliger*, in his Exercitations againſt *Cardan*, has ſhewn ſome twenty thouſand, in one ſmall Work; and no body imagines he has pick'd it perfectly clean. Yet *Cardan* was no ill Author. *Bayle*'s Dictionary has been called the Errata of *Morreri*; yet is not *Bayle* himſelf without his Errors.------The moſt we can ſay, is, that we hope there will be few found in the preſent Work, in compariſon of others of the like kind. Many thouſands we have corrected, both in the Dictionaries and other Writings we have collected from, by means of the Light which other Parts of Knowledge afforded: But after ſo large a Harveſt, no doubt there remains a tolerable Gleaning. We flatter our ſelves, however, that what we have overlook'd, the Reader will frequently be enabled to correct, by the Means here afforded; and that there will be few Errors found in the Book, which the Book it ſelf will not help to rectify.

AS to *Omiſſions*, there is ſcarce any avoiding 'em; and the more intelligent the Reader is, the more of this kind he will neceſſarily meet withal: they being only ſuch in relation to his fulneſs. Indeed, I muſt own my ſelf greatly a Debtor on this ſcore; and tho at preſent inſolvent, yet if the Reader will give me Credit, it ſhall be my endeavour to ſee all I owe diſcharged; if not in a Lump, yet by a Courſe of Payments.

FOR *Redundancies*, you know there cannot well be richneſs without 'em. After you have picked what you think fit of this kind, and laid it by; 'tis ten to one but the next Perſon that comes, will reſtore half of 'em to their places; and tax your Temerity, and want of Taſte: and the next after him will go near to replace the other half.

AS to *Irregularities*, and breaches of Method, I will not claim Impunity on the Score of being the firſt that introduced any certain Rules, or Method into this way of writing at all: But there will be at leaſt this Satisfaction attending my Caſe, that I cannot be indicted for the Breach of any Laws but my own.-----Nor

* Hiſt. de l' Acad. R. An. 1708. p. 135.

muſt

muſt it be forgot, that I pretend to have carried the *Dictionary-Way* to a pitch hitherto little thought of: So that if I have fallen ſhort of the Mark on one ſide; it may be ſome Atonement that I have gone beyond it in another. I am ſenſible, however, there is no Point I have been more delinquent in than this one of Method; and that I am at every turn forgetting my own View. The References, and neceſſary Connexions between the Parts, which ſhould ſhew their Relation, and help the Imagination to put 'em together, are but too frequently dropt, and the Reader left without his Clue.

AS to *Jejuneneſs*, and Crudity; no doubt there muſt be a deal of that kind, conſidering the Time ſo great a Load of Fruit had to hang and ripen. Much of it was gathered ere it could poſſibly be matured; ſo that 'tis no wonder it now and then taſtes of the Wood. But ſetting aſide this; if a Man may not be allow'd to ſay a good number of indifferent things, in the Compaſs of five hundred Sheets, I know not who would be an Author.

LASTLY, as to there being little in it *new*, and of my own growth; I muſt here change my Style; and from Confeſſion, turn to Vindication.-----The Work is, what it ought to be, a *Collection*; not the Produce of a ſingle Brain, for that would go but a little way; but of a whole Commonwealth. If any Perſon will undertake to write a Dictionary, even of ſome one particular Art, from his own Fund, alone; a Man may ſafely undertake to prove it good for nothing. I do not pretend to entertain my Gueſts at this rate, with juſt what my own ſcanty Barns afford: The whole Country is ranſack'd to make 'em the fuller Banquet. Call me what you will; a *Daw*, and ſay I am ſtuck over with other Peoples Feathers: with all my Heart; but it would be altogether as juſt to compare me to the *Bee*, the Symbol of Induſtry, as that of Pride. For tho I pick up my Matters in a thouſand Places; 'tis not to look gay my ſelf, but to furniſh you with Honey. I have rifled a thouſand Flowers; prickly ones many of 'em, to load your Hive. No body that fell in my way, has been ſpared; Antient nor Modern, Foreign nor Domeſtick, Chriſtian, nor Jew, nor Heathen: Philoſophers, Divines, Mathematicians, Critics, Caſuiſts, Grammarians, Phyſicians, Antiquaries, Mechanics, all are ſerved alike. The Book is not mine, 'tis every body's; the mix'd Iſſue of a thouſand Loins. The Prince of modern Authors, is pillaged to ſome purpoſe; and what Quarter then can any body elſe expect? If ever you wrote any thing your ſelf; 'tis poſſible there is ſomething in it of yours: ſo that you will at leaſt allow ſomething in it good.

NONE of our Predeceſſors can blame us for the uſe we have made of them; ſince it is their own Practice. It is a kind of Privilege attached to the Office of Lexicographer, if not by any formal Grant, yet by Connivance at leaſt. We have already aſſumed the *Bee* for our Device; and who ever brought an Action of Trover or Treſpaſs againſt that avowed Free-booter? If any body blames us, 'twill ten to one be ſome of thoſe very Drones, who are ſuſtained by our means.

'TIS idle to pretend any thing of Property in things of this Nature. To offer a thing to the Publick, and yet pretend a Right reſerved therein to one's ſelf, if it be not abſurd, yet it is ſordid. The Words we ſpeak; nay, the Breath we emit, are not more vague and common than our Thoughts, when divulged in print. You may as well prohibit People to uſe the Light that ſhines in their Eyes, becauſe it comes from your Candle: E'en clap it in a dark Lanthorn, and let us not be amuſed, and dazzled by it; if we may not be the better for good things, let's not be the worſe for the ill and indifferent ones mix'd with 'em.

WE ſee the ſame Thought, which was firſt ſtarted in one Author under a world of Crudity, borrow'd by another become farther improv'd and ripen'd; and at length tranſmitted to a third, yield Fruit in abundance. All Plants will not thrive in all Soils that will produce 'em; ſome languiſh in their Mother-Beds: whence the Gardner is under a frequent neceſſity of Replanting, Engrafting, *&c.*

TO do juſtice to a *Collection*, I mean a general and promiſcuous one; it has its Advantages. Where numbers of things are thrown precariouſly together, we ſometimes diſcover Relations among 'em, we ſhould never have thought of looking for: As, the Painter's and Sculptor's Fancy, is frequently led on to the boldeſt and moſt maſterly Deſigns, by ſomething they ſpy in the fortuitous Sketches of Chance, or Nature: inſomuch that a celebrated Author * makes no ſcruple to lay this down as the firſt Origin and Occaſion of all theſe Arts. 'Tis certain moſt of our Knowledge is empirical, the Reſult of Accident, Occaſion, and caſual Experiment: 'Tis but very little we owe to Dogmatizing and Method; which, as already obſerv'd, are poſterior Matters, and only come in play after the Game is ſtarted. 'Twas, in all probability, the hand of Chance that firſt threw Sulphur, Charcoal, and Salt-petre together; and what ſurprizing Effects have not aroſe from it; what Handle has it given to Art and Contrivance, to direct and apply this fortuitous Production?

'TIS indeed ſurprizing to conſider, what ſlender Experiments and Obſervations many of the capital Doctrines have aroſe from: The Blows of a Smith's Hammer on his Anvil, ſtruck out the Principles of Muſic; which *Guido*, a poor Friar, perfected by what he obſerved in conning over his Beads. The Inventions of *Printing*, of *Glaſs*, of the *Dipping Needle*, of *Phoſphorus*, of *Teleſcopes*, of *Taffata*, of *Antimony*, &c. are ſuppoſed to have aroſe in the like manner; as the Reader may find under their proper Articles: And how many more we know not, by reaſon the great Obſcurity of their firſt Riſe, ere they attain'd a degree of Uſefulneſs and Perfection ſufficient to be taken notice of, has buried the particular Circumſtances thereof. If we will hear the antient *Phœnicians*, and *Egyptians*, amongſt whom moſt of the Arts are ſuppoſed to aroſe; they all came from caſual Obſervations: Geometry from the Inundations of the *Nile*; the Flight of the Crane, gave occaſion to the Invention of the Rudder; the Ibis taught to adminiſter a Clyſter, *&c.* In effect, a new Obſervation in ſome Peoples Minds prepared for it, is like a Spark in a heap of Gun-pouder, which may blow a whole Mine.

WHAT Advantages may not Philoſophy derive from ſuch a Collection, or Farrago of Arts; when 'tis conſidered, that every Circumſtance, every Article of an Art, ought to be look'd upon as a Datum, a Phænomenon, or Experiment in Philoſophy; and that the leaſt of 'em may poſſibly be the Foundation of a new Syſtem?— To conſider only the *Tanning*, or *Currying* of Leather: what is the whole Proceſs, but a Series of phyſical Effects, ariſing from new applications of Body to Body? And how many Lectures will the Philoſopher have from Painting, Gardening, Agriculture, *&c.* touching *Planting*, *Engrafting*, *Pruning*, *Expoſure*, *Expreſſion*, *Walls*, &c. which might never have come in his way, but by ſuch a chance? When a thing is once ſtarted, it may be applied infinite ways, and no body knows where it will ſtop.

THRO'OUT the Whole, we have had a particular regard, both in the Choice of the ſeveral Heads, and in dwelling or amplifying upon 'em; to the extending our Views, dilating our Knowledge, opening new Tracks, new Scents, new Viſtas. We have endeavour'd not only to furniſh the Mind; but to inlarge it, and make it in ſome meaſure co-extend with the Dimenſions of all Minds, in all Ages and Places, and under all Situations and Circumſtances: as Language, in ſome meaſure, makes our Senſes do. With which view, we have given the Sentiments, Notions, Manners, Cuſtoms, *&c.* of moſt People, that have any thing new, unuſual, or hardy in 'em.

SUCH a Variety of Views, Principles, and Manners of thinking, is a ſure Remedy againſt being too violently attached to any one; and is the beſt way of preventing the making of Pedants, Bigots, *&c.* of any

* Leon Battiſta Alberti, della Statua.

kind. It may be ſaid, that every Art tends to give the Mind a particular Turn; and that the only way of maintaining it in its natural Rectitude, is by calling in other oppoſite ones, by way of Counter-ballance. Thus we find nothing more perverſe and unſufferable than a mere Mathematician, mere Critic, Grammarian, Chymiſt, Poet, Herald, or the like; and the proper Diſpoſition is only to be had from a juſt Temperament or Mixture of 'em all.

I OWN this is not the way to make a very great progreſs in any Art; but at the ſame time it is the only way to hinder our being ſpoil'd by any; and becoming Creatures rather of *Homer* or *Ariſtotle*'s making, than God's: and receiving our Taſtes, Views, Reliſhes, at ſecond hand, rather than from Nature her ſelf. This, however, is only to be underſtood with regard to perſonal Benefit. For no doubt the Publick is better provided for, by the mere Purſuers of particular Arts, than the general Appliers to all: ſince each is hereby brought to greater Perfection; and the Mixture and Temperament, wanting in the Individuals, is found in the Whole.

TO conclude, the ultimate View of a Work of this, or any other kind, ſhould be, the forming a ſound Mind, *i. e.* a Syſtem of Perceptions, and Notions agreeing to the Syſtem of Things, or in the Relation thereto, intended by its Author. The End of Learning and Study, is not the filling our Heads with other Mens Ideas; that is an Inrichment which may prove for the worſe, if it carry any ill Quality with it: Richneſs is not the chief thing aim'd at; 'tis only a Circumſtance, or Matter of a ſecondary Conſideration: Soundneſs is the firſt. There are many Manures which the Huſbandman dares not uſe, by reaſon they would corrupt the Land, at the ſame time they enriched it; and lay the Foundation of a Diſeaſe, which would in the End impoveriſh, and make it ſpend it ſelf in unprofitable Weeds. A little pure Logic, or Theology, or Chymiſtry, in ſome Peoples Heads, what Miſchief have they not produced?-----But it muſt be owned, Mens Heads are not ſo ſoon fill'd: the Memory is not ſo tenacious as we imagine; Ideas are tranſient things, and ſeldom ſtay long enough with us to do us either much good, or harm: Ten to one but what we read to-day, is forgot again to-morrow. And what chiefly makes new Ideas of any ſignificancy, is their extending and enlarging the Mind, and making it more capacious and ſuſceptible.-----But neither is this Enlargement the laſt Aim; but is chiefly of uſe, as it contributes to the increaſing our Senſibility, to the making our Faculties more ſubtil, and adequate, and giving us a more exquiſite Perception of things that occur; and thus enabling us to judge clearly, pronounce boldly, conclude readily, diſtinguiſh accurately, and to apprehend the manner and Reaſons of our Deciſions. In which view, ſeveral things may be uſeful, that are not ſo much direct Matters of Knowledge, as ſubſervient to the ſame End; for inſtance, much of the School Philoſophy, which by exerciſing and exciting the Mind, has a kind of collateral tendency to ſharpen its Faculties; and needs only be read, not retain'd, to produce its Effect.-----But neither does the Matter end here: Even this does not amount to the full and adequate End of Knowledge: This is only improving the Organ; and there muſt be ſome farther End in ſuch Improvement. No Man ſharpens his Weapon on the ſole Conſideration of having it ſharp, but to be the fitter for uſe. Briefly, then, our Faculties being only ſo many Inlets, whereby, and according to the Meaſure whereof, we receive the Intimations of the Creator's Will, or rather, the Effects of his Power and Action; all the Improvements made in 'em, have a tendency to ſubject us more entirely to his Influence and Direction; and thus make us conſpire, and move more in concert with the reſt of his Works, to accompliſh the great End of all things. In which our Happineſs and Perfection conſiſts; the Perfection of a ſingle Nature, ariſing in proportion as it contributes to that of the ΤῸ ΠΑ̃Ν.

ERRATA.

IN the Article *Angle*, Page 97. Column 1. Line ult. for *Centre* L, read *Centre* I.
Article Mean *Anomaly*, l. 10. inſert *Fig.* 64.
Article *Aſymptote* of a Logarithmic Curve, inſert *Fig.* 33.
Centre of Oſcillation, l. 11. for DEHB, r. DFHB.
Centripetal Force, l. 2. for *Fig.* 24. r. *Fig.* 25.
Centrobaryc, Corol. VI. for *divided into two* MD, r. *be biſected in* D, and for *m* O, r. *in* O.
Chord, p. 211. col. 2. l. 26. for *Fig.* 7. r. *Fig.* 6.
Circle, p. 221. col. 1. l. 27. for DE r. DF, and l. 36. inſert *Fig.* 7.
Circumſcribing, for *Fig.* 32. r. *Fig.* 29.
Commutation, l. 3. after *Earth* inſert *at* S, and for *Fig.* 24. r. *Fig.* 26.
Compaſſes, for *Geman Compaſſes* r. German *Compaſſes*.
Compoſition of Motion, l. 27. for *as far as e e*, r. *as far as c e*.
Conchilis, l. 7. for EE r. EF.
Cone, p. 300. col. 1. l. 13. for *Diameter of its Baſe*, r. *Diameters of its Baſes*.
Contact, l. 15. for *cuts* r. *touches*.
Crepuſculum, p. 344. l. penult. for *Sum of*, r. *Sun's*, and p. 345. l. 2. and 3. for, P Z *the Elevation of the Pole* P R, r. P Z *the Complement of the Elevation*, &c.
Curve, p. 361. col. 2. l. 26, and 59. for *Tab. Analyſis* r. *Tab. Geom.*
Cycloid, l. 4. for *Tab. Analyſis* r. *Tab. Geometry*.
Declinator, l. 25. for *Centre* E, r. *Centre* F.
Deſigning, l. 10. for *Fig.* 9. r. *Fig.* 15.
Diagonal, l. 77. for B S, r. B E.
Horizontal *Dial*, l. 9. for *Meridian Line* B, r. *Meridian Line* A B; and l. 16. for D C, r. D E, and l. 22. for *a* B C *d* H, r. *a b c d* H.
Eaſt *Dial*, l. 11. for A C, r. D C.
Primary *Dial*, l. 20. for E E, r. E F.
Line of *Diſtance*, for *Fig.* 10, and 11. r. *Fig.* 12.
Diviſion in Lines, inſert *Tab. Geometry*, *Fig.* 17.
Eccentric, for *Fig.* 11. r. *Fig.* 1.
Equation, p. 335. col. 1. l. 15. for *given Poſition*, r. *given in Poſition*.
Flying, l. 20. for *Temporal Muſcles* r. *Pectoral Muſcles*.
Geocentric *Latitude*, l. 11. for, *e* T ☿ r. *e t* ☿.
Latus Tranſverſum, for *Fig.* 5. r. *Fig.* 1. and for GLRO r. DLRO.
Logiſtic Spiral, for *Fig.* 11. r. *Fig.* 22.
Article Concave *Mirror*, Law II. after F inſert *Fig.* 34 *.
Paracentric Motion of Impetus, for *Fig.* 25. r. *Fig.* 24. and dele T.——*Paracentric* Solicitation of Gravity, dele *Fig.* 26.
Parallax of Longitude, for *Fig.* 28. r. *Fig.* 29.——*Parallax* of Aſcenſion, for 29. r. 28.
Parallelogram, l. 17. for *Fig.* 39. r. *Fig.* 41. and l. 19. for CH r. CD.
Particula Exſors, for *Augment* r. *Argument*.
Perſpective of a Triangle, l. 14. for *ſince a, b, and are the Appearances*, r. *ſince a, b, and c are the Appearances*.
Inclined *Plane*, Law IX. after A C inſert *Fig.* 58. and in the Corol. of the ſame Law inſert *Fig.* 60. and in Law XIII. for BAK r. FG.
Projectile, Law III. after *deſcribe a Parabola* dele *in a Medium uniformly reſiſting*.
Pump, Artic. Structure of a Forcing Pump, l. 1. for *in a Cylinder* r. *a Cylinder*.
Pyramid, l. 70. for DF r. DE.
Sinical *Quadrant*, l. 2. inſert *Fig.* 18.
Quadrature of the Ellipſis, l. 2. for *Circle*, r. *Curve*.
Rectangle, l. 22. for *Fig.* 41. r. *Fig.* 61.
Rectification of a Parabola, for *Conjugate Axes* r. *Conjugate Semiaxes*; and after *Hyperbolic Space*, add C Q M A.
Rectification of the Cycloid, l. 1. inſert *Fig.* 27.
Reduction of a Figure, l. 11. for *Fig.* 64. r. *Fig.* 65.
Refraction, l. 9. for B, r. F.
Retrogradation of the Sun, l. 2. for A N, r. A M.
Rhomb, Article I. inſert *Fig.* 19.
Screw, Art. IV. for *to be applied in* K, r. *to be applied in* D.
Sculpture in Marble, after *another Plummet like that of the Model*, inſert *Tab. Miſcellany*, *Fig.* 2.
Secant, l. 4. for *Circle* B, r. *Circle in* B.
Sector, p. 45. col. 1. l. 41. for *Lines* r. *Sines*.
Sine, p. 81. col. 1. l. 63. for *the Arch* E F C, r. *the Arch* F C.
Sine-Complement, l. 2. for A E, r. A H.
Solid Angle, l. 3. for *Fig.* 30. r. *Fig.* 31.
Star, p. 122. col. 2. l. 20. for *Fig.* 31. r. *Fig.* 7. and l. 24. for *the Star* C *deſcribing an equal Arch* C D H, r. *the Star* D *deſcribing an Arch equal to* C D H.
Triangle, p. 242. col. 2. l. 41. for AC, r. BC.

N. B. *The Figures relating to each Art are placed fronting the Name of the reſpective Art, in the Body of the Book; and are refer'd to under that Title: as,* Tab. Architecture, *Tab.* Geometry, *&c.—To each* Figure *is alſo annex'd the* Word *for whoſe Exemplification it ſerves: So that the Reader may either go from the Word to the Figure, which exemplifies it; or backwards, from the Figure, to the Word which explains it.*